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30 December 1980

Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

No. 75

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JAPAN SAYS IT WILL DELAY DUMPING OF NUCLEAR WASTE

Melbourne THE AGE in English 31 Oct 80 p 3

[Text] CANBERRA. — Japan had no alternative to dumping low-level radioactive wastes from nuclear power stations in the Pacific Ocean, the Japanese Minister for International Trade and Industry, Mr. Tanaka, said yesterday.

Speaking through interpreters, Mr Tanaka said Japan would delay the ocean disposal until objections from Pacific countries were resolved.

Asked what would happen if those countries continued to object, Mr Tanaka said that his Government was very patient and was prepared to continue to explain the harmless nature of the disposal for some time. But he added that Japan would like to make the disposal by next summer.

About 10,000 drums of waste material are to be dumped. Mr Tanaka said they would be stored for the time being in existing nuclear power stations. This would not be possible in the long term.

Mr Tanaka was asked why, if the ocean disposal was harmless, it wasn't dumped in waters closer to Japan.

The reply was given by the director-general of Japan's international Trade Bureau, who said that conventions of the International Energy Agency required that ocean disposal had to be made in depths of more than 4000 metres. There were no troughs of that depth near Japan.

Papua New Guinea is among the Pacific countries objecting to the disposal. Mr Tanaka also affirmed Australia's role in the expansion of the Japanese nuclear power industry.

He said that in the next 10 years Japan planned to reduce its dependence on oil for energy by 50 per cent by building more nuclear and coal fired power stations and using other forms of energy.

Mr Tanaka expected Australia to supply about 4 per cent of Japan's uranium needs. Japan was building nuclear power stations because it was confident that it would obtain that supply.

Australia is negotiating a uranium trade agreement with Japan which would involve waste safeguard guarantees. Mr Tanaka said yesterday that the delay in completing that agreement had nothing to do with the ocean disposal.

Mr Tanaka is in Australia as a guest of the Government.

CSO: 5100

NUCLEAR POWER PLANT CONSIDERED IN VICTORIA

Melbourne THE AGE in English 23 Oct 80 p 16

[Text]

The Leader of the State Opposition, Mr Wilkes, claimed yesterday that Victoria would turn to nuclear power because of Alcoa's electricity demands on the SEC.

Mr Wilkes said in Parliament that a team of six British scientists had visited Portland recently to evaluate the town's potential as a nuclear power site.

He said the site earmarked for Alcoa's aluminium refinery was compatible with the development of a nuclear power station and the flexibility of the State Government's agreement with Alcoa would not present problems.

"There is no doubt that there is a potential for the Government to use the site for a nuclear power station," Mr Wilkes said. "The commitment of our brown coal reserves to Alcoa makes this a certain possibility".

Mr Wilkes said that the scientists had been working on a British nuclear project but had been invited to do a study for Victoria. He said the scientists had worked on the costing of a nuclear power station in Portland.

The National Party leader, Mr Ross-Edwards, said that any Government which moved to set up a nuclear power station in Victoria would be the subject of intense criticism.

He said that anyone had the right to investigate nuclear power but the prospect was unlikely in Victoria in the foreseeable future. "We haven't got nuclear power and we are not going to get nuclear power," Mr Ross-Edwards said.

CSO: 5100

AUSTRALIA

NUCLEAR ENVOY WARNS OF SAFEGUARD PITFALLS

International Controls

Sydney THE SYDNEY MORNING HERALD in English 28 Oct 80 p 2

[Interview with Mr Justice Fox, ambassador-at-large for nuclear nonproliferation and safeguards, by Bruce Jones, Australian Associated Press correspondent, in London; date not given]

[Text] Mr Justice Fox, now coming to the end of his term as Australia's Ambassador-at-Large for Nuclear Nonproliferation and Safeguards, has a gut feeling that nuclear weapons will be used this century.

He believes it unlikely that the weapons will be used between the superpowers, but more likely by a country or countries in one of the more unstable regions of the world.

In an interview before closing his London office, he also agreed that there were problems to be resolved to public satisfaction on waste disposal and spent fuel storage and disposal.

He said this was a general view and he repeated what he had said before, that unresolved difficulties in these areas in the end might be a limiting factor in the development of nuclear energy.

After almost five years of total immersion in the subject — part of that time spent on the exhaustive Ranger environmental inquiry — he has only limited confidence in present international non-proliferation safeguards.

At the same time, he emphasises that they are a vital part of the non-proliferation regime and says everything possible should be done to have safeguards improved and extended.

And he adds that although bilateral safeguard agreements between countries in many respects are the best that can be expected for the time being, they are not the answer.

"We should aim as soon as we can to transfer reliance to international schemes being worked out or planned," he said.

The conditions Australia imposed on uranium buyers were evidence of the nation's earnestness but in some cases they could be difficult to enforce as time went on, he said.

No one should believe that because the term "safeguards" was used a fully "safe" situation existed.

For example, international safeguards do not involve international custody or control, but after-the-fact reporting that there seemed to have been diversion of material from the fuel cycle.

What Mr Justice Fox, would like to see, and has been playing a strong behind-the-scenes role in pushing, is a regime of international and multi-nation arrangements.

He says a country cannot maintain its position by trying to impose requirements unilaterally.

"It is a matter of necessity, and not simply vague hope or idealism, that we move with greater international consensus," he says.

"The IAEA (International Atomic Energy Agency) is the international body through which we should work, and it itself needs to be built up and supported.

"We are at present facing the prospect of the early introduction of commercial fast-breeder reactors, several of which we may see in the Western world this century. They use plutonium as a fuel and large stocks will be built up for their use.

"It is important to get in place as soon as possible a scheme in which stocks of plutonium are under control of an international nature and not able to be diverted for military purposes.

"Confidence that there has not been and cannot be diversion is important. Perception of risk is part of the complex with which non-proliferation deals."

Mr Justice Fox does not attempt to minimise the inherent dangers of the nuclear industry.

Rather, his approach is to identify realistically and acknowledge the problems and then set about seeing what can be done about them.

He is by no means a nulcear hawk, and appears to see himself working not simply for the Australian Government, but for mankind.

He deprecates the treatment of environmental organisations such as Friends of the Earth as fringe or "ratbag" bodies.

Other points he made during the interview, held in his office at Australia House, include:

In the context of the world slump in uranium demand there is time to plan carefully, with due regard for all competing interests, at the local level.

There is also time to enable adequate, or much better, international arrangements to be brought to an advanced stage.

As far as he is aware, Australia is unlikely to be able to sell much more than about 3,000 to 4,000 tonnes of yellowcake a year for delivery in the next five years or so. The Ranger mine's proposed initial production is 3,000 tonnes a year, and Nabarlek can now produce 1,000 tonnes a year.

World forecasts of requirements in the short term are progressively downward. An upturn is expected in the late 1980s according to some, although the market may not justify the opening of fresh uranium mines in Australia for some time.

Authoritative statements suggest that some manufacturers of nuclear reactors overseas may go out of business because of a lack of orders. In some recent years more orders have been cancelled than fresh orders made.

Mr Justice Fox, who intends returning to Canberra to take up duties as a Federal Court judge early next year, feels that the Australian public should be better informed about the proliferation problem, and what is being done about it.

In the three years he has been in the job he has visited about 30 countries and had discussions with more than 250 politicians.

He has attended many seminars and international conferences, and frequently delivered papers.

He was a member of the 15-man International Consultative Group on Nuclear Enegy for its duration, and he led the Australian delegation to the International Nuclear Fuel Cycle Evaluation (INFCE) in which more than 40 countries participated.

"Constant travelling knocks your health around, and it is very unpleasant living out of a suitcase all the time," he says.

He thinks he has been a main proponent of the thinking behind the "internationalisation" approach to solve the nuclear energy problem.

"In my view the way to handle the problem is not to rely heavily upon bilateral safeguards but to have a system which enables an international body of standing, which we assume would be the International Atomic Energy Agency (IAEA), to have a 'lock and key' control over stocks of plutonium and highly enriched uranium," he said.

Plutonium is created inside the core of all nuclear reactors and is extracted from spent fuel by chemical reprocessing. A large reactor generates several hundred kilograms of plutonium each year.

About 230 thermal reactors now operating have so far produced about 150 tonnes of plutonium, but most of it is still in the reactors in spent fuel stocks.

Because the amount of plutonium required to make a devastating weapon is so small compared with the vast quantities to be reprocessed, it is extraordinarily difficult for safeguards to keep track.

Plutonium is dangerous. It decays very slowly and in its predominant form, plutonium-239, is extremely dangerous if inhaled.

The development of the fast-breeder reactor would greatly increase these dangers. Even larger amounts of plutonium, about 10 times more than for thermal reactors, would have to be reprocessed for the same amount of electricity generated.

If by the year 2025 fast breeders were to supply all the nuclear energy projected, about 10,000 tonnes of plutonium might have to be reprocessed annually. The management of such colossal amounts of plutonium would present overwhelming difficulties.

Countries already on the road to fast-breeder reactors include France — with which Australia is at present negotiating a safeguards agreement — Japan, Britain, West Germany, the United States and the Soviet Union.

Editorial Comment

Sydney THE SYDNEY MORNING HERALD in English 29 Oct 80 p 6

[Editorial: "Everybody's Bomb"]

[Text] Mr Justice Fox, retiring Australian Ambassador-at-large for Nuclear Nonproliferation and Safeguards, has had some depressing but timely things to say in London about the future of nuclear weapons and of safeguards. He sees a real possibility that nuclear weapons will be used this century not necessarily by nuclear superpowers--restrained at least by the risk of mutual assured destruction inherent in nuclear exchange--but by smaller powers in what he describes as the "more unstable regions of the world."

But how does one define unstable in this context? Instability lies primarily in proliferation. Any country seeking a nuclear reactor capacity as a major alternative energy source is a potential nuclear weapons State. And there is no infallible means of detecting the process. India, which is not a signatory of the NPT (Nuclear Non-Proliferation Treaty), is a prime example of a State which used an imported nuclear reactor for declared peaceful purposes and, in fact, clandestinely built an atomic bomb.

The decision several years ago by West Germany, France, Belgium, Holland and Italy jointly to research and market FBRs (Fast Breeder Reactors) served notice on the world that the era of rapid proliferation was upon us. FBRs are reactors, sought by fuel-short countries, which convert abundant U-238 into plutonium 239 at a rate faster than they can consume it. Additional plutonium 239 can be used to fuel further reactors. Despite temporarily declining nuclear energy demand there is every chance of FBRs coming into operation in a number of countries, including Japan, before the end of this decade. Their danger lies in their capacity to produce weapons-grade fissile material. None of the potential FBR States would want fissile material to fall into the wrong hands. All would wish in their own interests to contain nuclear weapons proliferation. But both risks remain. They can only be prevented, if at all, by acceptance of rigid safeguards systems.

Mr Justice Fox suggests that Australia, as an important uranium producer, should look away from bilateral systems, which are unenforceable in point of fact, to international regimes. But the principal international instruments, the NPT and IAEA (International Atomic Energy Agency), are not particularly promising as they stand. This is especially true of the NPT which allows a signatory to withdraw on three months notice if it feels its "supreme interests" threatened. Moreover the treaty is rendered largely impotent by the activities of nonsignatories which include important nuclear powers, such as China, France and India, and a number of powers which have a rapidly obtainable nuclear weapons capability, like Pakistan and South Africa, an alleged current capability like Israel, or a capability within future reach, such as "Brazil, Chile and Argentina.

Mr Justice Fox's main recommendation aims at giving the IAEA "lock and key" control over global plutonium stocks. This may be the only goal to work for, but its chances of success invite pessimism. In the end, decisions as to whether to go nuclear, and whether to use nuclear weapons in a given situation, are those of individual Governments and none else.

CSO: 5100

MT ISA WORKER CHARGED WITH URANIUM THEFT

Brisbane THE COURIER-MAIL in English 28 Oct 80 p 8

> [Text] Mount Isa.--Six drums containing 2200 kg of uranium oxide were sent to a Sydney firm as a result of a newspaper advertisement, Mount Isa Magistrate's Court was told yesterday.

James Alexander McDonald, 52, of Hilary Street, Mount Isa, appeared before Mr K.J. Peacock, S.M., charged with having stolen 2200 kg of uranium oxide from the Mary Kathleen Uranium Ltd. mine between April 30, 1977, and July 1, 1978.

A Sydney import-export businessman Richard Appleton, of Clontarf, N.S.W. told the court he placed advertisements in several newspapers seeking employment as a trader.

In a statement tendered to the court, Appleton said he had received a telephone call from a man known to him only as Johnson in response to one of the advertisements.

"He asked me if I could sell some uranium for him," Appleton said. "I told him that it would be very difficult to handle.

"He told me he was a prospector and miner based at Mount Isa, but working in the bush.

"He also told me the product was a high grade uranium oxide and that he produced it in a bush plant."

Under cross-examination by Mr Robin Smith, for McDonald, Appleton said he was willing to undertake the sale of the product because he had been doing that sort of thing for other people at that time.

Inspector Horace Connor Robertson told the court he had taken possession of a freight note issued by North Queensland Express, a carrying company with a branch in Mount Isa.

The freight note said that goods consigned were 44 gallon drums of copper concentrate with a mass of 2200 kg and that the six items were from A.J. Johnson, P.O. Box 602, Mount Isa.

Following a search of McDonald's premises at Hilary Street, Mount Isa on August 10, Robertson said he took possession of a telegram addressed to Johnson, P.O. Box 602, Mount Isa, a copy of the Miner newspaper and several clippings from other newspapers on one of which was written the name "Appleton," an Australia Post renewal notice and receipt for P.O. Box 602, Mount Isa, and a key which appeared to be a post office box key.

Robertson said he told McDonald Appleton had claimed a person giving the name of Johnson had asked him if he could sell some uranium oxide.

He said Appleton told police arrangements were made for the forwarding of six drums of uranium oxide from Mount Isa.

He said he then told McDonald a person answering his description had arranged with NQ Express carriers to forward the drums. Robertson said he then asked McDonald if he had stolen the consignment of six 44 gallon drums of uranium transshipped through NQ Express to Sydney. Robertson alleged McDonald replied that he had.

"I took the product from the plant when I was working on the drier in '77 and '78," McDonald was alleged to have said.

He then allegedly told Robertson he had carried the uranium oxide from the Mary Kathleen mine site in small tins and transferred the contents of the tins into drums planted in various places along the Mount Isa-Cloncurry Road.

The hearing is expected to end today.

CSO: 5100

UNIONISTS SUPPORT MINING, EXPORTING OF URANIUM

Canberra THE FINANCIAL AUSTRALIAN in English 30 Oct 80 p 3

[Article by Errol Simper: "Majority of Unionists See Benefit in Uranium, Says Survey"]

[Text] A majority of Australian trade unionists believes mining and exporting uranium will benefit the nation, according to a survey released yesterday by the national Clemenger advertising network.

The survey, conducted for Clemenger--one of the biggest agencies in Australia--among 2000 adults by Reark Research Pty Ltd, also suggests an increasing number of people are prepared to accept that businesses have to make a profit.

A total of 41 per cent of people questioned thought business profits in Australia were "reasonable," while 11 per cent thought they were "too low."

The survey also suggests trade union attitudes are blamed by 48 per cent of people for Australia's economic downturn, though only 28 per cent specifically nominated excessive wage demands.

On the uranium issue, the survey found that 50 per cent of unionists--three per cent more than "all adults" questioned--thought uranium mining and export was to Australia's benefit.

A total of 40 per cent of unionists--the same figure as for the general community--said it wasn't a benefit.

A total of 38 per cent said company profits were "too high," but this was 10 per cent less than the findings of a similar survey in 1977.

A 1974 Clemenger survey found that 61 per cent felt profits were excessive.

A total of 41 per cent was happy with profit levels, compared to 26 per cent who felt they were reasonable in the 1974 survey.

Those questioned on who they thought was responsible for the economic downturn were allowed two answers. After "unions" (48 per cent), people nominated forces outside Australia and excessive wage demands (28 per cent), followed by the "current Government" and the "laziness of the Australian worker."

The 1975 survey, which also allowed two answers, said 50 per cent blamed wage demands, 43 per cent the unions and 25 per cent thought laziness and Governments were to blame.

CSO: 5100

AUSTRALIA

BRIEFS

ACTIVITY AT GUNSIGHT LEASE--North Flinders Mines Ltd as found economically significant deposits of cobalt on its Gunsight leases in the Flinders Ranges north of Adelaide. The company's report follows a reassessment of the leases, which were previously known for their copper-uranium content, and a forecast by directors of "interesting follow-up results." Exploration work on the Gunsight leases carried out by North Flinders' partner, US-owned Marathon Petroleum Australia Ltd. indicated a strike 1000m by 30m, with an initial target zone of 500m. Work on the leases has uncovered another of the "rare earths"--cerium. Cerium is quoted at $70 a kg for high quality product. Research on the feasibility of separating and marketing the ore is being carried out by the Mary Kathleen uranium project. The copper-uranium mineralisation of the Gunsight prospect has an average grade of 1 kg a tonne of uranium and 1 per cent copper a tonne. [By Ian McIlwraith] [Excerpts] [Canberra THE FINANCIAL AUSTRALIAN in English 28 Oct 80 p 3]

MARY KATHLEEN PRODUCTION--Production of uranium oxide by Mary Kathleen Uranium Ltd rose 2.7 per cent in the first nine months of 1980, according to the latest production report. MKU said production for the nine months ended September 30 was 614.2 tonnes, compared with 598.3 tonnes during the same period last year. The amount of U308 produced in the September quarter also was up. [Text] [Canberra THE FINANCIAL AUSTRALIAN in English 28 Oct 80 p 16]

NEW URANIUM SITE--Townsville--The Ben Lomond uranium mining project near here is being prepared for a final submission for federal government approval. French owned prospector Minatome Australia Pty Ltd has advertised for senior staff to prepare a feasibility study for the planned mine, west of Townsville. Minatome operations manager, Mr Keithe Folwell, said yesterday the company was completing its drilling and exploration work and moving into detailed evaluation. This would include water supply studies, with a freshwater dam to be built, and planning for access roads and a processing plant for the uranium. The company probably would be able to apply for federal government approval for the mine early in 1982. If this were granted quickly, production could start in 1984-85. About 16 people were employed at the site on exploration work. [Text] [Brisbane THE COURIER-MAIL in English 30 Oct 80 p 2]

URANIUM EXPLORATION FUNDING--Eastern Copper Mines NL plans to raise $1.3 million with an issue of 3.9 million 50c shares paid to 22c at 35c a share. The issue will be offered to shareholders on a two-for-five basis. It has been underwritten by Wilson & Co. Chairman, Mr J.F.S. Brown, said the purpose of the issue was to provide working funds to enable it to expand its exploration activity--mainly in the field of oil shale, gold and uranium. Eastern Copper had outlined substantial areas underlined by bituminuous limestones. These limestones had been shown to be up to 40m thick and to have a strike length of 14 km. An initial drilling program to test these had been contracted to begin on November 11. [Text] [Brisbane THE COURIER-MAIL in English 11 Oct 80 p 13]

CSO: 5100

INDIA SEEKS CHANGE IN IAEA GUIDELINES

Bombay THE TIMES OF INDIA in English 8 Nov 80 p 7

[Text] United Nations, November 7 (PTI):

INDIA has characterised the guidelines set by the international atomic energy agency for its technical assistance and training programmes as discriminatory and called for their revision.

Speaking in the general assembly's discussions on the annual report of the Vienna-based U.N. agency yesterday, Prof. N. G. Ranga, M.P., and member of the Indian delegation, said: "From the very beginning India has objected to the new guidelines as these are not only discriminatory but are derived from extraneous considerations."

He said these guidelines, which sought to differentiate between countries devoted to peaceful uses of nuclear energy and the nuclear weapon states, ran counter to the statute of the IAEA.

"The technical assistance programme of the agency should be free of restrictive and preferential pre-conditions". The objectionable provisions of the guidelines must be removed to ensure that the agency's role in promoting development of atomic energy for peace was not impaired.

Several other countries, notably Argentina, had taken a similar stand on the IAEA guidelines.

Prof. Ranga also referred the 'tilt' in the IAEA annual report towards weapon states. While the report spoke about the "unsafeguarded nuclear facilities" in countries devoted to peaceful utilisation of nuclear energy, it made no mention about such facilities in the nuclear weapon states.

"In the view of the government of India, this commission has led to a serious misrepresentation of facts and has created a distorted and erroneous picture that some 'errant' non-nuclear-weapon states are indulging in unsafeguarded activities when the fact is that the world is actually threatened by nuclear peril due to misuse of nuclear power for military purposes," he said.

"We should not delude ourselves by shutting our eyes to the fact that the real threat that is being posed to the world community is by the proliferation of nuclear weapons by nuclear weapon states."

Prof. Ranga also criticised the convention on the physical protection of nuclear material as sponsored by the IAEA. The convention, he said, had failed to take into account the large nuclear stockpiles in the weapon states.

Despite charges of discrimination made by India against the IAEA, India would go along with a resolution to be brought up before the assembly, commending IAEA's work and asking all states to support its endeavours.

CSO: 5100

AEC HEAD SPEAKS TO ENERGY CONFERENCE

New Delhi PATRIOT in English 21 Nov 80 p 10

[Text] India may set up a dozen more nuclear power reactors of 500 MW each during the next decade to attain a target of 10,000 MW of nuclear power by the turn of the present century Atomic Energy Commission chairman H N Sethna said in New Delhi on Thursday.

He, however, added that 10 more reactors of 235 MW each (Narora type) too had been proposed for the western, northern and southern regions remote from the coal fields.

Dr Sethna was delivering a lecture on 'Energy strategy for the eighties' in memory of Sanjay Gandhi.

Emphasizing the importance of nuclear power, Dr Sethna said the Atomic Energy Commission's nuclear plants got 'unfortunately delayed substantially although we made an early beginning.'

The Atomic Energy Commission chairman was forthright in his admission that the growth of nuclear power in India had been much slower than expected but he attributed it to difficulties faced in building a self-reliant capability.

The power output of Tarapur nuclear station was curtailed on account of difficulties in fuel supplies for the US, he said and added that if the US stopped the supplies "we shall take other steps to keep Tarapur going. We believe we have the necessary technological capability" he added.

The newer heavy water plants had run into "initial difficulties" but, he said: "We have overcome the problems."

Although, he said, India at present had a small nuclear capacity, it was the only country to have a full control over the nuclear fuel cycle apart from the major nuclear countries.

Dr Sethna said "enormous care" had been taken in designing the Narora Atomic Plant in the Seismic zone and dismissed as "completely wrong information" the statement by a Delhi professor that it was a potential hazard to the Gangetic plains.

CSO: 5100

GANDHI, SINGH ANSWER QUESTIONS ON NUCLEAR PLANTS

Bombay THE TIMES OF INDIA in English 21 Nov 80 p 7

[Text] NEW DELHI, November 20 (PTI & UNI) The government of India retains full title to the special nuclear material supplied by the United States for use as fuel at the Tarapur atomic power station, the Prime Minister, Mrs. Indira Gandhi, told the Rajya Sabha today.

Mrs. Gandhi told Mr. Ramanand Yadav and Mrs. Amarjit Kaur in a written reply that agreement between the two countries clearly provided for the reprocessing of the special nuclear material utilised in the Tarapur reactors in an Indian facility and the government of the United States had no responsibility or right to repurchase such materials.

While the plutonium produced through reprocessing was to be retained by the government of India for its own programme, the recovered residual uranium 235 could be sent back to the United States against further fresh fuel supplies ,she said.

Mrs. Gandhi said the delay in the reprocessing of the spent fuel of the Tarapur station had been due to the reluctance of the United States government to complete the formality of a joint determination of the safeguardability of the reprocessing facility in Tarapur.

This delay forced the government of India to carry out extensive modifications for augmenting the storage facility at avoidable expense and effort. On the other hand, the reprocessing plant at Tarapur had not yet been used for the purpose for which it was built, Mrs. Gandhi said.

Remedial measures would be taken by the government of India to remove such operational and economic constraints in the functioning of the Tarapur station. The accumulation of spent fuel had not so far caused any problems at the other operating nuclear power station in Rajasthan, she added.

The United States government had been told that India would not accept continuing delays and uncertainties in the supplies of enriched uranium fuel for Tarapur nor any conditions outside the framework of the existing co-operation agreement of 1963.

In a written answer, the minister of state for science and technology, Mr. C. P. N. Singh, said India had requested the US government to clear the second overdue shipment of Tarapur fuel without any further delay.

In the case of stoppage or continued delays in fuel supplies by the United States, one of the alternatives would be to operate the Tarapur reactors on indigenously fabricated "mixed oxide fuel". Investigations were in progress, but it would be premature to spell out the results achieved, he said.

NARORA PLANT SAFE

Mrs. Gandhi said the government was not in agreement with the findings of an expert that the Narora atomic power project was 'unsafe'.

She told Mr. N. N. Pande that the government's attention was drawn to a news item on October 27 which quoted Dr. Direndra Sharma, professor of Jawaharlal Nehru University, as saying the project was 'unsafe'.

Mrs. Gandhi said the enriched uranium grade plant and the enriched fuel fabrication plant of the nuclear fuel complex in Hyderabad had not been able to operate to full capacity on account of irregular supplies of enriched uranium since February, 1977.

The consequent loss of production was estimated at 28 tonnes of fuel worth Rs. 2.8 crores, Mrs. Gandhi said.

CSO: 5100

BRIEFS

EXPANSION OF HYDERABAD NUCLEAR FUEL COMPLEX--The Rajya Sabha was informed today that the nuclear fuel complex Hyderabad is being expanded at an estimated cost of over 130 million rupees. It is to be expanded from its present capacity of 100 tons of finished fuel per year to 210 tons for meeting the requirements of the heavy water reactor program. In a written answer, Prime Minister Mrs Gandhi said under the cooperation agreement of 1963, the United States is obliged to make available enriched uranium for use of fuel at the Tarapore atomic power station on a timely basis. India is precluded from operating the Tarapore reactor on any other fuel. [Text] [BK041017 Delhi Domestic Service in English 0830 GMT 4 Dec 80]

CSO: 5100

PAKISTAN ALLEGEDLY BUILDING ENRICHMENT PLANT

Bombay THE TIMES OF INDIA in English 7 Nov 80 p 6

[Text] NEW DELHI, November 6 (PTI).

PAKISTAN imported from a Dutch firm a total of 6,500 tubes made of special steel for its secret uranium centrifuge plant near Islamabad, according to a Dutch government report.

The firm exported these tubes to Pakistan — the last shipment on September 10, 1979 — despite the Dutch government warnings to the firm not to do so, the report said.

According to the report, the firm knew that the tubes were to be used in the Pakistani centrifuge plant for enriching uranium. It is an essential item for gas centrifuge.

A defence analyst here told PTI that the purchase of so many tubes indicated that Pakistan was building a large-scale plant for uranium enrichment.

The Dutch document is a report of an inter-ministerial committee set up to investigate the affairs of Dr. Abdul Quadeer Khan, the Pakistani metallurgist who allegedly took away secrets of the Dutch centrifuge technology.

Dr. Khan was employed during 1972 to 1976 by the firm FDO in Amsterdam which is a major subcontractor for "Urenco" enrichment plant at Almelo--a joint venture of the Netherlands and two other countries.

The report, after detailed investigations of Dr. Khan's activities, has confirmed that he "was involved in intelligence work".

The report has made an interesting revelation that Dr. Khan, now in charge of the Pakistani centrifuge plant, was born at Bhopal in India on April 1, 1936.

The report, however, said that there was no evidence that Dr. Khan was planted by Pakistan at FDO for the purpose of collecting gas centrifuge information.

The Pakistani scientist frequently took confidential reports home where they were translated by his Dutch wife. He was able to obtain addresses of other gas centrifuge to sub-contractors--information "which he later used to obtain materials for the Pakistani plant."

German Technology

Dr. Khan frequently went into restricted gas centrifuge areas in Almelo, the report said. In October 1974 he translated two of the 12 parts of a secret report concerning a German centrifuge apparatus.

During the 16 days of his translation work he had access to the centrifuge factory and to several other prominent gas centrifuge experts who thought Dr. Khan was one of them.

"It must, therefore, be considered possible that Dr. Khan was able to obtain knowledge of the technology of a German centrifuge of a type differing technically from Dutch centrifuges of that time", the report said.

It said that Dr. Khan's intelligence activities came to light after his departure for Pakistan at the end of 1975 and these were brought to notice of the Dutch internal security branch in 1976.

A clearcut evidence that he was collecting gas centrifuge information came in the form of letters from him in 1976 and 1977 to his colleague in FDO seeking "confidential data on gas centrifuge and components," the report said.

CSO: 5100

RADIO COMMENTS ON NUCLEAR ENERGY PROGRAM

BK021150 Karachi Domestic Service in English 1715 GMT 1 Dec 80

[Commentary by A.A. Jamil Zubairi]

[Text] Speaking on the occasion of Indonesian President Suharto's visit to the Karachi nuclear power project, Kanupp, President General Mohammad Ziaul Haq had reiterated Pakistan's determination to acquire nuclear technology for peaceful purposes. He said that not only our scientists and technologists but the entire nation is determined to achieve this goal. He expressed his willingness to share the expertise and experience that this country has gained in this field with Indonesia which is starting the construction of its first nuclear power station next year. Pakistan's technical experience was at the disposal of our brothers in Indonesia as a token of love and friendship, President Zia added.

Pakistan's nuclear power station is the first of its kind in the entire Muslim world. Started years back it was set up with Canadian assistance but later, due to political considerations, Canada withdrew its support and refused to supply spares and the fuel required for keeping the plant running. Since then Pakistan had to rely on its own resources and its scientists and engineers are now manufacturing spares and fuel themselves. This is indeed a great achievement for which this country can rightly feel proud of. Pakistan's nuclear power program had been stepped up and is being vigorously pursued not because of prestige and domestic political reasons; the program has been devised in keeping with the overall national requirement of development. It is not a short-term program but is to be taken as a long-term commitment to meet the energy and fuel needs for the next few decades.

It was in this context that Pakistan had finalized a deal for a reprocessing plant from France. It caused a lot of hue and cry in some of the developed countries, under the lead of the United States of America, and Pakistan was accused of enhancing its nuclear capability for making what the latter called the Islamic bomb. Despite our repeated clarifications and assurances that the nuclear program is purely peaceful, the United States pressured France and got the deal canceled.

As compared with other sources of energy, nuclear energy is the cheapest, besides, our conventional energy resources are very limited. Hydropower is a major resource at the moment but has suffered constraints [as heard] for shortage of finance, high cost of equipment and the remoteness of potential sites. Most of the hydro-sources are depleted [words indistinct] and require high [word indistinct] costs to utilize the power generated there; besides, the cost of construction of dams and hydropower stations are prohibited. Our coal deposits--both known and probable--are estimated to be around 473 million tons which, when reduced to good quality coal, corresponds to a mere 173 million tons. Gas reserves in the country are not very large and its use for power generation is not considered economical]. The growing consumption of oil and its increasing prices demand that even with the [words indistinct] indigenous resources of oil we will continue to endeavor for developing more economic resources of power generation. We are thus left with no choice but to develop nuclear resources and that too on a self-reliance basis. We are glad that during the last few years when all Western countries refused to assist us in a peaceful nuclear program our scientists have made a great breakthrough. As President Zia has said time and again this is a matter of life and death for this country and we must go ahead with the program. We are happy that now we are in a position to assist our brethren in faith as well in this field.

CSO: 5100

PAKISTAN REPORTED PROGRESSING IN NUCLEAR PROGRAM

Madras THE HINDU in English 10 Nov 80 p 4

[Text] ISLAMABAD

Pakistan may or may not be making the Islamic bomb, but it certainly is breaking the nuclear barrier as newspapers here proudly screamed when Islamabad recently announced success in making its own nuclear fuel.

The announcement about Pakistan's entry into the league of a dozen or so nuclear fuel-making nations sparked fresh speculation about its nuclear designs and experts quickly revised their estimates about how soon Pakistan could join the nuclear club.

Estimates still vary from a few months to a few years, but the fact that it has produced nuclear fuel coupled with reports that Islamabad now has most of the components of a centrifuge plant indicate that it could well make a few nuclear weapons in the Eighties.

Feeding the rumour mill are Pakistan's determined efforts to set up a reprocessing plant to recover uranium and plutonium—both weapon grade materials—from spent fuel of atomic reactors, in spite of France's refusal to go ahead with the deal concluded in January 1976.

Reprocessing Plant

Islamabad has provided $ 40 million, including $ 22 million in foreign exchange to be raised through its own resources, for the commercial fuel reprocessing plant in this year's budget.

Last year $ 31.45 million was set aside for the plant but budget papers did not indicate how much of the project had been completed on ground or how long it would take and what would be the ultimate cost.

Provision of another $ 400,000 for expansion of the Pakistan Institute of Science and Technology (PINSTECH), a key research institution near Rawalpindi, has lent weight to rumours about assembly of a plutonium reprocessing plant there. PINSTECH itself cost about $ 17.2 million. The Pakistan Atomic Energy Commission (PAEC) Chairman, Mr. Munir Ahmad Khan insists that locally mined uranium was used to make the nuclear fuel, but rumours persist that Libya transferred to Pakistan 258 tonnes of uranium from Niger.

As if to answer doubts whether Pakistan has enough uranium reserves to sustain a continuous production of nuclear fuel, Islamabad is spending nearly $ 15 million to look for the coveted material. This year's budget provides $ 2.1 million for continuing a survey of nuclear minerals. The second phase of this $ 9.8 million project is already half way through.

Another $ 4.8 million project for detailed exploration of uranium in Siwalik sandstone in Dera Ghazi Khan district is expected to be finished by 1981-82.

Mr. Munir Ahmed Khan said it had taken them seven years to fabricate the nuclear fuel without any outside assistance at a plant designed and rigged up by Pakistani scientists at Chashma, about 175 km. southwest of Islamabad.

The Chashma-produced fuel, he hastened to add, could only be used for producing electricity in nuclear power plants and it should not be confused with enriched uranium — a weapon grade material.

But he also indicated that a 600 mw second nuclear power plant to be set up at Chashma in Mianwali district of Punjab at an estimated cost of $ 810 million, was likely to run on enriched uranium.

Necessary preliminaries are said to be complete and a provision of $ 3.9 million, including $ 2 million in foreign exchange, has been made in this year's budget for the Chashma plant (Chashnupp).

20 Nuclear Plants Planned

After Chashnupp, the Pakistan Atomic Energy Commission plans to set up more nuclear power plants at a much faster rate and build about 20 of them by the year 2000.

Chashma-produced fuel has been used to restart the 137 mw Karachi nuclear power plant (Kanupp), which was shut down at the end of 1978 following the Canadian refusal to supply fuel and spares unless Pakistan cancelled the reprocessing deal.

Now operating on a mix of locally fabricated and Canadian fuel, Kanupp can use upto 1,000 bundles of uranium rods each weighing about 14 kg. It produces about 35 to 40 mw of power and there are plans to increase its capacity gradually to 90 mw.

The plant has been overhauled, its computer system improved and the second phase of its expansion is to be completed by June 1981 at a cost of $ 317,000. Another $ 1.35 million is to be spent on providing it shore protection.

Two Reactors in Operation

With Kanupp running again, Pakistan now has two reactors in operation. A pool type 5 mw research reactor working since 1965 does not produce any significant amounts of plutonium.

But Kanupp has been producing about 74 kg of separable fissile plutonium annually for six years, according to an American expert who says the 600 mw Chashnupp could provide Pakistan plutonium for 30 bombs.

President Zia-ul-Haq is confident that "we will be able to complete our reprocessing plant without any outside assistance." The PAEC Chairman, Mr. Munir Ahmed Khan, insists that Pakistan needs the reprocessing plant because without plutonium there can be no efficient breeder reactors and without breeders the full potential of nuclear power cannot be realised.

nuclear development programme.

Mr. Munir Ahmed Khan himself dismissed as science fiction a story that Pakistan had received from Libya $ 5 million stuffed in suitcases for the Islamic bomb.

Other spokesmen have denied a London report that China was helping Pakistan in its nuclear programme or that Chinese nuclear experts had arrived in Pakistan to speed up Pakistan's first nuclear explosion in Baluchistan.

Reports that Gen. Zia had, during his visit to China in May last, asked for long-range missiles for nuclear warheads have also been described as untrue. Islamabad insists it has no intention of making nuclear warheads.

But some European firms are certainly continuing to supply Pakistan parts and equipment which might well be used in the assembly of a nuclear fuel reprocessing plant.

Swiss Firms Selling Technology

Only in September, a Swiss Government spokesman had asserted in Berne that Swiss firms would continue selling nuclear technology to Pakistan as many other countries were also doing so. Deliveries to Pakistan were continuing, he said, calling American protests over them as "old hat".

In Amsterdam, a Netherlands Government department is reported to have charged a group of automobile component companies with supplying Pakistan steel tubes which could be used as centrifuge rotors in a uranium enrichment plant.

Gen Zia's brief stopover in Paris for talks with President Valery Giscard d'Estaing while on way to the United Nations also renewed speculation about Islamabad's efforts to resurrect the reprocessing plant deal.

There are reports that Paris has instead offered a co-processing plant, but Islamabad has termed it inferior and based on a new and unfamiliar technology.

Other reports say that by the time the deal with SGN, a firm partly owned by the French Government, fell through, Pakistan had received most of the blueprints for the reprocessing plant. With these designs, Pakistan might well build the plant with components bought from various sources.

Speculation about French intentions stems from inclusion of a $ 22.63 million French Suppliers Credit for material and equipment for the Pakistan Atomic Energy Commission in Islamabad's budget estimates of foreign assistance. The previous year's estimates also put $ 20 million under this head.

The PAEC Chairman says Pakistan's nuclear power programme has not been stepped up because of prestige or domestic political reasons, but only to meet the country's energy and fuel needs for the next few decades.

Pakistan's nuclear programme may not be geared towards making the bomb, as it claims, or the bomb alone, but it certainly is part of a strategy to gain "technological leadership" of the Muslim world in West Asia and Africa.

In Islamabad's view, to quote again from the PAEC Chairman's address to Pakistani engineers at Lahore last year, it has not only the capacity "but the time for assuming this leadership has also come."—PTI Feature.

CSO: 4220

SPECIAL REPORT ON NUCLEAR PLAN, PROJECTIONS

General Policy

Buenos Aires LA PRENSA in Spanish 6 Nov 80 pp 13, 15

[Text] Argentina is firmly committed to the development of the exclusively peaceful uses of nuclear energy, in the conviction that the atom should serve the well-being of mankind.

With the approval of Decree No 302/79, the national executive branch took a basic step toward the formulation of a long-term nuclear policy for the country. The decree implements the policies and goals approved a year earlier, calling for the building of 4 600-megawatt nuclear power plants using natural uranium, modified with heavy water, and also the supplementary installations to supply them, such as a heavy water plant and other fuel cycle factories

If indeed it is true that many precedents show that the country's commitment to this sector is not a mere expression of desire but a concrete reality, not until this document was promulgated did a program for nuclear electrical generation become tangible in form, moving beyond the previous policy of deciding on the building of atomic plants one by one.

This decision provides a proper framework for the rational planning of its investments by national industry and for enterprise decisions, with a view to participation in this plan which is designed basically to achieve national self-sufficiency in a sector so vital from the geopolitical point of view.

The goals motivating this program stress "increasing the scientific, technical and industrial effort in the nuclear sector for peaceful purposes and the utilization of the human and natural resources of the country in this field to contribute to consolidating national development," broken down into the following specific objectives:

1. Development of a continuous program of nuclear research and achievement for peaceful purposes.

2. Improvement of the relative developmental position achieved in the nuclear sector.

3. Achievement of an increase in scientific and technical personnel specializing in the nuclear field, guaranteeing their constant training and employment and promoting their retention in the country.

4. Contribution to developing national science and technology through the contribution of the successes achieved in the nuclear field.

5. Increasing the production of nuclear electrical energy, contributing to the development of the interior of the country and to saving hydrocarbons.

To achieve these goals, a series of policies have been drafted, a breakdown of which includes:

1. On the basis of national interests, assigning high priority to the development, production, use and control of nuclear energy.

2. Promoting increasing applications of nuclear technology.

3. Formulating short-, medium- and long-range research and development plans in the nuclear field, guaranteeing continuity in their implementation and working to perfect the technology for the next generation of nuclear reactors best suited to the country.

4. Promotion of the design and construction of nuclear plants, with a speedy increase in the national technical and industrial contribution to satisfy the future demand for electrical energy.

5. Development of a scientific and technical structure with its own capacity for achievement to generate the knowledge necessary to achieve a high level of national participation in the nuclear field.

6. Promotion of increasing participation by national industry and engineers in nuclear equipment.

7. Extension of the medium- and long-range nuclear research and achievement programs, guaranteeing their continuity and the satisfaction of the needs of the scientific and technical personnel.

8. Promoting the development of the national capacity for design, planning, direction, construction, commissioning and operation of the installations required for the nuclear program.

9. Inclusion of the role of nuclear electrical energy in the national energy plan.

10. Choice of natural uranium technology for the nuclear plants, with provision for the possible use of other nuclear fuels, in accordance with the national interest.

The National Atomic Energy Commission (CNEA) has been developing a work plan which is being kept constantly up to date and which includes six programs:

building of nuclear plants; supplies for nuclear plants; radioisotopes and radiation; radiological protection and safety; research and development and management; training and support.

Building of Plants

The purpose is to build and operate nuclear plants with increasing participation by national science, engineering, technology and industry.

The work plan calls basically for the operation of the Atucha I Nuclear Plant, which since its commissioning has produced a highly satisfactory result. The building of a second battery house to expand the storage capacity for burned fuel elements and to continue replacing imported supplies for the plant with domestic products is underway.

The program also includes the execution of the Embalse Nuclear Plant projects in the province of Cordoba, which were originally contracted out to a trust made up of a Canadian and an Italian firm on a turnkey contract. However as of 1977, the CNEA took on increasing responsibilities in the installation of the steam-supplied nuclear sector, fully assuming the role of main subcontractor for installation of the nuclear sector as of the middle of 1980.

The CNEA is continuing with the task of training the personnel who will have to operate the equipment and encouraging and implementing the active participation of domestic firms in supplying components and engineering services and installing the various sytems for this plant, seeking in particular to achieve the greatest possible knowledge and experience to facilitate the management of future plant projects.

Meanwhile, the bid on the first of the four plants for which the nuclear plan calls between now and 1997 has already been awarded, and it is expected to be commissioned in 1987. It will have a net capacity in excess of 680 megawatts and it will be built near the Atucha Nuclear Plant, to which it is similar in design characteristics, thus contributing to more efficient operation.

With a view to implementing the plans for Atucha II and the other plants for which the plan calls, the national executive branch has authorized the establishment of the Argentine Nuclear Electric Power Plants Enterprise (ENACE), with majority state participation, through which Argentina will gradually acquire competence in the management, engineering and construction of nuclear power plants, which beginning in 1977 [sic] will give it maximal independence of foreign sources.

Supply Program

With a view to "providing nuclear supplies to nuclear plants with maximal participation by national science, engineering, technology and industry, such as to achieve full self-sufficiency in the nuclear sector," the program constitutes perhaps the broadest program of implementation because of the number of sectors it covers.

It includes, for example, all the tasks pertaining to the exploration of and research on nuclear minerals, in particular, aerial prospecting work over

100,000 square kilometers in Patagonia (provinces of Chubut and Santa Cruz), geological and geophysical studies in Chubut, detailed exploration of new deposits in Salta and Jujuy, prospecting in areas of interest in the Cordoba Mountains, study of the uranium-yielding potential of the Conlara valley (San Luis), studies of the Sierra Pintada deposit (San Rafael, province of Mendoza) and prospecting in the Los Chihuidos area (Neuquen).

As to the production of uranium concentrate, the work is directed toward optimizing production in the Tonco (Salta), Pichinan (Chubut) and Malargue (Mendoza) mining-factory complexes.

A contract signed early in 1980 between the CNEA and a French-Argentine business trust will make it possible to pursue the exploitation of the Sierra Pintada deposit, the present reserves of which alone will guarantee national self-sufficiency in uranium and which will expand considerably as a result of the intensification of the exploitation plan.

A uranium concentration plant with a capacity of 700 tons of U_3O_8 per year will be built at the deposit. The domestic production of concentrate, meanwhile, reached 200 tons in 1980, and with the expectation that there will be a surplus in the future, a new legal system to allow its export has been established.

While Argentine technology for obtaining sinterable uranium dioxide of nuclear purity is being developed, a new production line of German origin has been installed at the Cordoba Factory Complex, enabling it to meet the production needs dictated by the fuel cycle.

The production of Atucha-type nuclear fuel elements within this program includes various tasks on the pilot plant level, to obtain the technology for its production in the country, which will make it possible to operate an industrial plant at the Ezeiza Atomic Center on which construction is well along. Also adjacent to it the Special Alloys Factory is being built. It will produce the zircalloy capsules used to enclose the uranium tablets within the fuel elements. This program also includes the operation of a pilot zirconium sponge plant at the Bariloche Atomic Center, the expansion of which to reach a production level of 10 tons per year is under study.

The work program includes the building of a laboratory for the testing of irradiated materials and fuels, a high-pressure thermohydraulic circuit to study and test fuel elements, and another low-pressure circuit to test and analyze these elements before they are put into the reactor. The program also covers production of heavy water, which is planned on the basis of the building of the pilot plant going up in the area near the Atucha Nuclear Power Plant, and the operation of a laboratory for work with hydrosulfuric acid.

Meanwhile, to satisfy the needs of the nuclear power plant program in the medium range, a Swiss firm has been awarded the bid for the building of a heavy-water industrial plant with a production capacity of 250 tons per year.

Radioisotopes and Radiation

The goal of this program is "to produce the radioisotopes and radiation sources required for the market and to promote their use." In general terms, this means developing radioisotopes and radioactive compounds in order to meet more than 90 percent of the domestic demand (a small portion is imported for technical-economic reasons) and to increase exports; continuing to operate the semi-industrial irradiation plant at the Ezeiza Atomic Center, with expansion of its use in radiosterilization services to meet domestic market needs; encouragement of the building of plants of this type in the private sector; operation of cells and other facilities for the handling and fractioning of radioisotopes and radioactive materials, to produce sealed high-activity sources; providing reference service in dosimetry and the metrology of ionizing radiation for the Latin American area; and in general, developing new applications for radioisotopes and radiation sources in medicine, industry, science, agriculture, the food industry, etc.

Radiological Protection

This program is designed "to provide the country with protection of the people and the environment against possible harmful effects of nuclear origin," which involves carrying out activities pertaining to norming, control, overseeing, inspection and supervision of everything relating to the uses of radioactive materials of nuclear origin and ionizing radiation, with the exception of X-rays, making preoperational studies and evaluations and operating treatment plants for radioactive residues.

Research and Development

The goal is "to consolidate a scientific and technical infrastructure with a self-sustaining capacity which will generate the knowledge necessary to achieve self-sufficiency in the nuclear sector." To this end, multiple activities in basic and applied research and technological development are being pursued in the fields of biology, physics, chemistry, engineering, etc, suitably selected to support the programs mentioned above and to meet the future requirements of the country in the sector.

One of the most ambitious projects in this program, now in full swing, is the construction, installation, commissioning and operation of a 20-megavolt (E) electrostatic accelerator, which will function at the Constituyentes Atomic Center, and is already under construction.

Management, Training and Support

This program has as its goal "to manage the activities pursued by the CNEA, to train personnel and provide the necessary infrastructure."

Where organization and programming are concerned, work is being done on the utilization of the counting data system based on the principles in common use in industrial and trade enterprises for the drafting of the nuclear plans which will follow the present ones, and establishing the legal framework best suited for the future activities of the institution and the nuclear industry in the country.

Training tasks (one of the most firmly established CNEA activities) include the implementation of a program to obtain the human resources necessary for the fulfillment of the nuclear plan and continuation with the multiple training courses. A decisive step in this direction was taken with the organization of the nuclear engineering career program which is offered at the Balseiro Institute.

Plans call for development of the operations of the computer center and its remote terminals, improvement of the system of communications among the CNEA departments, and expansion of the physical infrastructure of the atomic centers.

This program also covers the implementation of international cooperation agreements. Argentina has played an important role in the international program for the evaluation of fuel cycles (INFCE) and is a member of the group of nonaligned countries coordinating efforts in the realm of peaceful uses of nuclear energy which held its first meeting in Buenos Aires between 30 June and 4 July of 1980.

Argentina is the first developing country to have undertaken a major program for transfer to another country, in this case Peru.

Atucha,Embalse Nuclear Plants

Buenos Aires LA PRENSA in Spanish 6 Nov 80 p 14

[Text] In Lima, near Atucha (Zarate district), the first nuclear plant in the Argentine Republic is going up. It marks the beginning of a new era in the development of our national electrical energy sector. It adds uranium to the energy resources utilized by the country, with the resulting saving in oil and natural gas.

In order to achieve the highest level of participation by Argentine industry in what was to be the first nuclear plant in the country, the CNEA carried out a broad preliminary study on industrial capacity, and then engaged in a campaign of education and encouragement in order to inform businessmen of the requirements of the technology involved. This participation has been important, involving a volume representing about 40 percent of the total cost of the project. Where civil construction work was concerned, the contribution of Argentine industry came to about 90 percent.

In 13 January 1974, the reactor at the nuclear plant reached critical mass. This means that the process of fission designed to produce the energy which would be processed by suitable means into electricity had begun.

Participation in Nuclear Projects

The Degremont enterprise has participated actively in the nuclear development of the Argentine republic. Its experience in water treatment has been put to concrete use in the facilities making up the Atucha Atomic Power Plant and the Embalse River III Plant, currently under construction.

For the specific application of the water treatment processes, advanced technology is being used, not only that obtained from the original enterprise, the Degremont Company of France, but also on license from enterprises such as Geiger International and the Hamon Company.

The most recent project the company has undertaken, which is currently in the planning stage, is a total demineralization facility for the heavy-water pilot plant which will be located at Atucha. It involves drawing off and filtering water from the Parana River (at a rate of 50 cubic meters per hour), and 2 demineralization chains (with a flow of 40 cubic meters per hour each).

This continuous activity as a CNEA contractor, in addition to becoming traditional in nature, has meant the adaptation of the Degremont work systems to meet the quality requirements of that institution. That body licenses its contractors on the basis of their potential to meet the quality control level requirements, such that the installations they supply can provide the stipulated safety conditions.

These facts, to which must be added the actual supplying of all the water treatment plants existing in this field to date, gives Degremont full confidence in its very active participation in the development of the Argentine Nuclear Plan.

Choice of Systems

In a conventional thermoelectric power plant, the fuel (coal, gas or oil) is burned to heat water and convert it into steam. This steam goes under pressure into a turbine coupled to a generator which produces the electricity. In a nuclear plant the conventional fuel is replaced by a nuclear fuel, i.e. material containing fissionable cells. Uranium 235 is fissionable, as is plutonium, but only 1 part in 140 of natural uranium is uranium 235. Natural uranium, with its low percentage of fissionable material, or enriched uranium, in which the percentage of uranium 235 has been increased, can be used in a reactor.

The problem of building a nuclear power plant confronts the country with the choice of the best fuel: natural uranium or enriched uranium. Plants using enriched uranium have a basic advantage in that, at least for the time being, very few countries are engaged commercially in the enriching process.

Natural uranium, on the other hand, is produced and sold by various countries. Argentina precisely has abundant deposits of uranium.

Since with either of these two fuels, a nuclear power plant would be economically competitive with the equivalent conventional thermoelectric plants, the choice of natural uranium was made in order to avoid dependence in the Argentine atomic policy.

Atucha Nuclear Power Plant

The reactor at the Atucha Nuclear Plant uses natural uranium modified and cooled by heavy water as a fuel, with a single pressure container and two parallel primary circuits. In the secondary circuit, the steam (natural water) which operates the turbine is obtained from two heat exchangers--steam generators. Its capacity is 319 megawatts net.

The reactor with its accessories and the primary circuits are located in a building with double protection, a pressure-resistant steel sphere 50 meters in diameter, with an outer structure of concrete.

The 319,000 kilowatts from Atucha would suffice to keep 1.5 million television sets operating simultaneously. This figure, although impressive, is not so great in comparison to the vast energy needs of the zone. But this is only the beginning of electrical energy production of nuclear origin. The greatest importance of the Atucha Nuclear Plant has to do with its tremendous potential for the future development of our country.

Embalse Plant

At the behest of the Cordoba provincial energy enterprise, the CNEA undertook to make a feasibility study in 1967 of the building of a nuclear power plant in that province. On the basis of these studies and other supplementary ones carried out with the secretariat of state for energy, the conclusion was reached that the electrical system of the province of Cordoba should be interlinked with the greater Buenos Aires-coastal system and that the plant to be built should have a capacity almost double that of Atucha.

Subsequently the CNEA began to draft the documents necessary to solicit bids for the building of the plant. The basic policy pursued in the drafting of the specifications called for maximal participation by Argentine engineering and industry in the completion of the project.

Bids were due to be submitted on 2 May 1972. On that date eight were received from six enterprises in the FRG, Canada, the United States, Italy and Japan. The bids submitted represented the most modern techniques achieved to date, not only in the nuclear portion as such, but the conventional part of the project as well.

It took 82 expert professionals from the CNEA assigned to 10 work groups by subject to evaluate the bids.

The national government decided on the use of natural uranium for the Cordoba Nuclear Power Plant as well. On this basis, the CNEA proceeded to accept the bid submitted by the Atomic Energy of Canada Ltd. trust and the Italian Industrial Plant Company (ITALPIANTI), which offered the conditions most favorable in terms of the interests of the country, and the pertinent contract discussions were immediately launched.

The plant will be built on the Almafuerte peninsula on the southern bank of the Tercero River reservoir. It will have an output capacity of 600 megawatts (E).

The energy source will be a Candu-type reactor, with natural uranium fuel elements, cooled and modified by heavy water. The heavy water travels in a closed circuit through the reactor and the heat exchangers. These heat exchangers generate the steam produced by the light water which supplies the turbogroup. The primary circuit, along with the two machines which supply the reactor with fresh fuel elements and remove the burned elements, are located in a circular building of prestressed concrete some 42 meters in diameter and 50 meters high.

This structure also contains the measurement and control instruments operated from the control room. Adjacent to the reactor building is the service building, where the control room, fuel element storage, laboratory and workshop are also found.

The tower with the column for the reprocessing of heavy water and the chimney which is the outlet for ventilation air rise from this building. The steam pipes lead from the reactor building to the turbogroup building.

This building contains the turbine, with one high and three low stages, and a 644-megawatt generator at a tension of 22 kilovolts. The condensers cooled by lake water are located beneath the low stages.

The water intake is located in a building housing the pumps for the cooling water and to supply water for general purposes. In addition to the facilities mentioned there are the input transformers and the main transformers through which the plant receives or distributes energy to the transmission lines.

The link with this line is provided by a switching yard with its control building.

The administration building, auxiliary diesel generators, a water treatment plant, a radioactive waste depot, a porter's lodge and garage complete the facility.

Nuclear Industry Materials

Traditionally, Sandvik has been a major supplier of materials for nuclear plants, including which we might mention zirconium alloys for fuel capsules and stainless steel and nickel alloys for steam generators and heat exchangers.

In a nuclear reactor, the fuel must be prevented from coming in direct contact with the coolant, in order to prevent possible chemical reactions and contamination with radioactive fission products. The nuclear fuel, composed of synthesized uranium oxide, is placed in tubular capsules which are put together in bundles to make up the fuel elements. In addition the capsules provide support for the fuel and define its geometric shape, which is of primary importance in carrying out a controlled nuclear fission process. Materials suitable for the capsules must have a low effective neutron capture section, suitable resistance and malleability, compatibility with the fuel, good resistance to corrosion from the cooling liquid, and suitable thermic conductivity. The mechanical properties may be influenced by radiation, in addition to the effect of very high heat levels. Also the volume of impurities, mainly carbon, hydrogen and nitrogen, is controlled.

It is necessary to obtain tubes with the necessary combination of malleability and mechanical resistance to the environmental temperature and high temperatures. This is one of the most difficult problems to resolve.

The capsules must be worked at cool temperatures until the final dimensions are achieved with intermediary heat treatments. With the choice of the proper type of lamination equipment, mandrel and cylinder dimensions, degree of reduction at each step, annealing time and temperature, a structural texture (desirable orientation of the crystals) is obtained such that the desired combination of resistance to breakage and malleability is ensured.

Importance of Cooling

Nuclear power, when produced, must be kept under continuous temperature control, such that at no time can the cooling of the container in which the nuclear reactions are produced be allowed to fail. As natural flowing cold water is in the majority of cases increasingly rarely found, this problem is resolved with durable and reliable cooling apparatus which can be placed wherever required.

The Lix Klett SAIC firm, licensed by Carrier International Corporation to produce and install all its products, has had an opportunity to collaborate in its special field in the installation of nuclear plants being built in the Argentine republic and their supplementary activities. The installation and distribution of air-cooling equipment at the Atucha I plant, in the building called the switchboard hall, the draft project of which was carried out by one of its engineers at Siemens AG, in Erlangen, should be mentioned. Air conditioning has also been provided in the section with the computers and neutron-flow measurement, and in the powerhouse, mechanical ventilation facilities the purpose of which is to dissipate the great volume of heat generated by the engine, have been provided. The extractors and fans installed in the switchboard hall at the Embalse River III Nuclear Plant in Cordoba ensure its proper ventilation. The opening and operation of the extraction system is done by means of automatic controls. By way of illustration it might be mentioned that 2,380 horsepower are required to operate the thermomechanical installations.

Among the auxiliary buildings in connection with the power plant is the nuclear fuel elements factory, where the air conditioning and mechanical ventilation have been entirely completed. The sections for the metallography laboratory and the testing of materials, particularly beryllium and uranium, are of special interest since the mechanical ventilation systems there require a so-called absolute filtering system, such that the air taken out can be released into the atmosphere without causing contamination. The cooling plant for this building includes three multicompressor units totaling 350 TR. Air conditioning is provided by 24 air processing units. Sixty-two mechanical ventilation units have been provided and the total installed motive capacity is 1,275 horsepower.

The thermomechanical facilities are of the greatest importance in all aspects of the nuclear sector and the technology used for these facilities is the product of long experience in the cooling and air conditioning industry.

Atomic Energy Serving People

Buenos Aires LA PRENSA in Spanish 6 Nov 80 p 15

[Text] Since 1974, the first powerful nuclear plant in Latin America has been functioning in this country. Various research reactors developed by the technicians--the first have been in operation since 1958--made it possible to do valuable research work and at the same time advance the production of radioisotope and radiation processes to supply the domestic market and those of various countries on this continent. All of this came together in an accumulation of technical knowledge which has enabled Argentina to make transfers of nuclear know-how to sister nations such as Peru, Bolivia, Ecuador and Uruguay.

This situation is the result of continuous and consistent work carried out since 1950, when the National Atomic Energy Commission (CNEA) was established, a task to which the many efforts of successive graduating classes of scientists, professional workers and technicians contributed. Thus it was possible to draft the 1979-1997 Nuclear Plan, which was approved by Decree No 302/79, creating a framework for the building and operation of four nuclear plants to go into service between 1987 and 1997, in addition to that already in operation--Atucha I--and that being built at the Tercero River reservoir (Embalse) in the province of Cordoba, which will go into operation in 1982. The plan, which also includes the building of plants for the production of heavy water and various parts of the fuel cycle, is oriented toward the goal of achieving self-sufficiency in this activity which is fundamental to the economic development of the nation.

Origins

The first official origins of Argentine activity in the nuclear field date back to 1945, if indeed our scientists had made earlier ventures into the field, for example in the realm of uranium mining. In that year, when the world became dramatically aware of the potential of atomic energy, the Argentine government issued a decree regulating the exploitation of uranium deposits.

Five years later, with Decree No 10936/50, the national effort in this sector began to take shape with the establishment of a National Atomic Energy Commission, an autarchic body reporting directly to the office of the president of the nation.

Since then research in the most widely varied disciplines has been added, leading to the development of laboratories for nuclear physics, radiochemistry, analytical chemistry, uranium chemistry, electronics, biology, nuclear medicine, cosmic radiation, isotope separation, metallurgy, etc, with valuable equipment designed especially for these purposes.

Systematic prospecting of our national territory began with a view to finding uranium-bearing ores and studying the technology for their processing, as well as using radioisotopes for medical and occasionally industrial uses.

In 1953 the first theoretical course in nuclear reactors was offered, and in 1955 a physics training and research institute was established in Rio Negro, the forerunner of the present Balseiro Institute, where professional nuclear engineering courses and courses leading to a doctorate in nuclear physics are offered, and the Bariloche Atomic Center, a technological and scientific research center of increasing importance.

First Achievements

The undertakings mentioned made it possible to consolidate a scientific and technical body which, despite the short history of its activity, was in a position to present 37 works at the international conference on peaceful uses of atomic energy held in Geneva in 1955, thus placing Argentina in an outstanding position on an international level for that era.

Since then, the development of the CNEA has been proceeding ever more speedily, not only because of the greater experience acquired, but also because with the partial liberalization of the secrecy policy after the Geneva conference, it was possible to seek a greater contribution from foreign experience.

Under these conditions, and based on U.S. plans, the first Argentine experimental reactor, the RA-1, was built in this country through our own efforts, and it has been in use since 1958 at the Constituyentes Atomic Center, one of the CNEA research conglomerates. The later development in connection with the critical RA-0 and RA-2 facilities led to the building of an experimental radiation and production reactor designed in the country, the RA-3, which has functioned since 1958 at the Ezeiza Atomic Center. These reactors have served as models for the current development of the research reactors Argentina is supplying to Peru within the framework of the technological aid agreement between the two countries.

Another year which was decisive for the development of the CNEA was 1965, when the national executive branch commissioned it to make a feasibility study, analyzing the possibility of building a nuclear electric power plant in the country. This study was entirely carried out at the CNEA, and it showed that the building of a plant in the coastal zone of the country was technically feasible, economically desirable and financially viable.

At the same time the CNEA was increasing its activities in the development and production of the necessary supplies (uranium concentrates, fuel elements, heavy water, special alloys) and in prospecting for and development of uranium-yielding resources, in the production and use of radioisotopes and radiation, in radiological safety, in the handling of radioactive residues, in nuclear safety and in the basic and applied research aspects necessary for the achievement of its goals and to remain alert to the new possibilities in the field.

In addition to the installations mentioned, the CNEA has others scattered throughout the country. For example, the uranium-bearing deposits in Sierra Pintada, Los Gigantes, Don Otto and Pichinan; the uranium concentration plants in Malagues, Don Otto and Los Adobes; the uranium dioxide conversion plant in the city of Cordoba; nuclear medicine centers in Buenos Aires, Cordoba, Salta, Mendoza and Bahia Blanca; and an experimental plant for the production of heavy water in Atucha in accordance with an agreement with other institutions, and another plant of an industrial type, the contract on which was recently awarded to a Swiss firm, to be built in the province of Neuquen; the pilot plants for the production of fuel elements, the factories (under construction) for fuel elements and zircalloy tubes, etc.

The Future

With the approval of Decree No 302/79, a basic step was taken toward the formulation of a long-term nuclear policy in the republic of Argentina. However, the many background elements we have mentioned show that the commitment of the country to the sector is not just an expression of desire, but of concrete reality. However, with this recent document it can be said that a program for nuclear electric power generation has taken on tangible form, going beyond the previous system of deciding to contract for nuclear plants one by one, under the turnkey system. This decision provides a proper framework for the rational planning by national industry of its investments and for enterprise decisions, with a view to participation in this plan, designed, as we have said, to achieve national self-sufficiency.

A reading of the decree clearly reveals the plan of action in the nuclear field until the end of the century. At a time when plans have been drafted in this field throughout the world, and in view of the specific challenge posed by the hydrocarbons crisis, this plan confirms Argentine confidence in the future of nuclear energy and its potential, despite those who see in it a threat or those who want to dictate to other nations how to undertake their developmental processes.

This program finds the CNEA in full swing and will demand that this body multiply its efforts in the fields mentioned. On the solid foundation provided by the silent and continuing work of the personnel of this institution over three decades, it is possible to predict that the goals set forth in terms of the potential of the country will be achieved, as is the desire and with the support of the whole community.

This has begun to take on tangible form with the approval of Decree No 2441/79, authorizing the CNEA to award a contract to a German firm for the construction of the Atucha II nuclear plant, and one to a Swiss firm for the construction of a heavy water plant to be built in Arroyito, province of Neuquen.

But even more important than this is the authorization for the establishment of an engineering firm with the CNEA playing the majority role and a decreasing minority contribution by the German enterprise, acting as industrial architect for the next nuclear plan, with abandonment of the turnkey system and with increasing participation by Argentine industry. This is how the CNEA is moving toward the future.

Applications of Nuclear Electronics

Buenos Aires LA PRENSA in Spanish 6 Nov 80 p 15

[Text] "Our enterprise has recently signed an important contract with the National Atomic Energy Commission, in accordance with which it will supply a radioactive element measurement system for use in connection with problems in the lungs and elsewhere in the body," according to statements made by the AADEE Development and Research, SRL enterprise which has been engaged since its establishment in the physics and nuclear medicine fields. The statement added that the great effort put forth has resulted in its designation as the Argentine representative of major firms in the United States, such as Canberra Industries, Inc., Tracor Analytic, Capintec and Radeco.

The firm's concern with public health problems began with its founder, who began in the electronics field as an amateur 26 years ago, and then graduating in nuclear electronics from the Faculty of Exact Sciences at the University of Buenos Aires 19 years ago.

This firm provides rapid and efficient service, often free, to hospitals, sanatoria and intensive therapy establishments.

A great many of its developments are being used today in various departments of the CNEA, the balance going to the other aspect of the enterprise, which is the production of equipment for the determination of the acid-base state. Future plans include developments for the new Embalse Nuclear Plant and the building of a computerized acid-base machine, which will be one of the first in the world.

Nuclear Industry Technology

Buenos Aires LA PRENSA in Spanish 6 Nov 80 p 15

[Text] Since its beginnings, the Zoloda Electromechanical Industry, S.A. has constantly expanded due to the existence of favorable circumstances on the market in which it is involved, and a business policy which has as its goal adaptation to the new requirements which are constantly dictated by the development of technology. The growth of this industry has followed that of the market it serves, in terms of production volume and technical complexity.

In the course of the past 23 years, new materials, designs and production techniques for the products in its original line have been added, and this in turn has created the conditions for the production of other new ones, raising the levels of their complexity and quality and the technical competence of the 110 persons the firm employs. The results of this process are perhaps clearest, because of their continuity, to one learning about this enterprise for the first time and observing the notable results of its activities.

One change which serves to illustrate what has been said is the introduction of nuclear technology into the country, leading to the national production of components for this industry. A group of enterprises, including Zoloda S.A., has developed the capacity for such production, with a view to continuing to work closely together in the dynamics of adaptation to these new techniques.

5157
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PAPER SCORES INCONSISTENCY OF U.S. NUCLEAR POLICY

Buenos Aires LA NACION in Spanish 31 Oct 80 p 8

[Editorial: "Nuclear Discrimination"]

[Text] Up to now our nation has avoided the reprehensible discriminatory dangers that seek to hinder Argentina's obvious progress in obtaining the necessary self-sufficiency in nuclear energy. The public clarification that this recognized scientific endeavor in advanced technology, supported with proven capability by the National Atomic Energy Commission, aims toward applying nuclear power for eminently peaceful purposes, does not seem to agree with the mistaken attitude adopted on this subject by the United States.

The explanatory restatement made by the Argentine ambassador to the White House about the peaceful nature of the nuclear energy development plan--considered in a 20 year program, during which $10 million will be invested--should eliminate any false assumptions. "To thrive and continue growing," the diplomat explained, "Argentina must actively develop its capacity to generate electricity by using nuclear energy." This must be done despite obstacles, some of which--he was sorry to say--resulted from decisions by the U.S. Government which had destabilizing effects on our two countries.

The proven existence of valuable deposits of natural uranium in Argentina determined the building of reactors supplied with this mineral instead of the dependent importing of enriched uranium. In this way, Atucha I and two other nuclear plants under construction have started to form the foundation on which Argentine nuclear energy development will be based. The suspension of enriched uranium shipments by the United States and the refusal to provide the proper technology to develop a heavy water plant, which is necessary for the use of natural uranium as a fuel, has led to the signing of contracts with Swiss and West German firms in order to continue the task begun. "Although the military applications of heavy water and natural uranium technology are known," the ambassador pointed out, "Argentina does not have such intentions. The policy followed by Washington of refusing to transfer technology has angered many countries--including Argentina--and leads them to conclude, at least with evident justification, that the United States is arbitrary and selfish and does not want to share its own technology."

The inconsistency of the North American position, which has created ill will among those who see their self-determination violated and consequently their development suppressed, should be reviewed intelligently. The peaceful use of atomic energy chosen by our country and others in South America must not and cannot tolerate arbitrary limitations that hinder the praiseworthy goals established through research and the development of nuclear projects.

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CSO: 5100

COBOEN PREPARING FOR INSTALLATION OF ZERO-POWER REACTOR

La Paz PRESENCIA in Spanish 10 Nov 80 p 3

[Text] The Bolivian Nuclear Energy Commission (COBOEN) is now in the process of completing detailed work on the specially built structure that will house a neutron generator at the Viacha Nuclear Research Center.

The hermetically sealed structure is already finished and lacks only a door being built in Peru to meet various safety conditions. The door will totally block atomic radiation.

This information was given to PRESENCIA by Edgar Ampuero, executive director of COBOEN.

When the structure is ready, a neutron generator will be installed. The generator is the first phase for the subsequent installation of a zero-power reactor, also called the "subcritical unit," which will be used for research and educational purposes.

The neutron generator will enable COBOEN to enter a commercial phase in which it will analyze all kinds of minerals and compounds for agriculture.

It was also learned that analyses will be made for foreign mining companies.

Through a technique called "neutronic activation," the neutron generator makes it possible to determine the quantity, expressed in percentage figures, of the different mineral substances in a sample.

Startup of this equipment by COBOEN will revolutionize the country's technology because traditional methods no longer yield sufficiently precise results. In contrast, utilization of the generator makes it possible to obtain data on the compression of minerals with absolute precision.

The executive director of COBOEN said that in time, COBOEN will install additional equipment in order to give the generator more uses.

Neutronic Activation

The neutronic activation method is based on the exposure of part of the material to be analyzed to a radioactive source, making the sample radioactive. The computer attached to the neutron generator then processes the exact quantity of the various mineral substances contained in the sample.

Similar analyses can be made for agriculture, mining, industry and other branches of activity.

The neutron generator in Viacha can produce 10 billion neutrons a second.

Activities

The Bolivian Nuclear Energy Commission, set up in 1960, is devoted to research in the peaceful uses of atomic energy, inasmuch as Bolivia has signed and ratified all international treaties on the matter.

The Nuclear Research Center in Viacha, established in 1977, is mainly involved in three activities through the Division of Nuclear Physics, radiochemistry and the application of radioisotopes.

The Nuclear Physics Division is the most advanced.

Neutron Generator: The Bolivian Nuclear Energy Commission (COBOEN) will soon officially open a closed structure in which a neutron generator will be installed, the first phase for the subsequent installation of a zero-power reactor called the "subcritical unit." COBOEN engages in research in the peaceful uses of nuclear energy.

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PLANS FOR 1981-85 NUCLEAR DEVELOPMENT PROGRAM DISCUSSED

Caracas RESUMEN in Spanish 19 Oct 80 pp 26-27

[Text] An IVIC [Venezuelan Institute for Scientific Research] experimental reactor will be used for the training and instruction of personnel for the power generation industry.

"In the 1981-85 5-year period," according to the preliminary version of the Sixth National Plan, which was prepared by CORDIPLAN [Office of Coordination and Planning], "the necessary steps will be taken so that at the end of this Sixth Plan [the nation] will have solid criteria which will permit a decision on the advisability of undertaking a nuclear energy program in the country."

To this end, it continues, "action will be taken to implement the following measures:

"To complete studies being conducted to determine the feasibility and advisability of introducing a nuclear power program within a medium time frame.

"To obtain sufficient proven reserves to support the development of a probable future program.

"To train a sufficient number of professionals and technicians to make up the basic cadres in the sectors of research, technology, academic personnel and groups for decisionmaking and task execution.

"To increase the research capability of centers specializing in all phases of the nuclear fuel cycle.

"To Familiarize present organizations with the development requirements of nuclear activities, through the reshaping of those now in existence and the establishing of those needed to work in a coordinated and harmonious way and with the necessary flexibility to structure the indispensable levels of authority and execution."

It is stated that to reach the proposed objectives, the following implementing policies have been established for the sector:

"Intensification of exploration for radioactive minerals through the execution of a program provided with a budget large enough to cover the potentially most attractive areas of the country in such a way that by the end of the plan, the regions in which quantification of the natural resource is to be carried out will be identified.

"Stimulation of experimental activities designed to establish uranium and thorium extraction and purification methods and the obtaining of heavy water.

"Increased capacity for analysis of samples in centers engaged in this specialty, as a support function for uranium exploitation activities.

"Stimulation of experimental activities geared to the manufacture of combustible elements which use uranium and thorium.

"Utilization of the IVIC experimental reactor as hardware for the training and instructing of personnel for the power generation industry.

"Promotion of the production of radioisotopes and radioactive medicines in the country, with a view to establishing the necessary scientific and technological infrastructure which, over the short term, will meet the national demand for products now being imported.

"Progressive incorporation in experimental activities of personnel being trained abroad in the various nuclear disciplines.

"Continuation of the program for the training of human resources abroad, which the National Council for the Development of the Nuclear Industry has been carrying out through sectional programs of the Gran Mariscal de Ayacucho Foundation.

"Close linkage of the national scientific and technological system with the development of nuclear projects and support for the various research programs being carried out.

"Completion, in the shortest possible time, of the legal, technical, industrial and safety standards which will regulate nuclear activities in the country.

"Initiation of studies to evaluate the potential utilization of nuclear energy in Venezuela, particularly those relating to the preselection of the site, in harmony with plans for territorial development.

"Promotion and encouragement of the country's industrial and engineering sectors so that they will participate in the future nuclear program.

"Stimulation of the development of peaceful applications of nuclear energy in industry, medicine, livestock raising and agriculture and food preservation."

With respect to investment programs, it is stated, "The amount of investments earmarked for the 1981-85 5-year period, which will be used for a complex of activities ranging from exploration to the development of peaceful applications for nuclear energy- is 121 million bolivars."

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BRIEFS

NUCLEAR ENERGY PRODUCTION--The use of nuclear energy for the production of electricity is currently one of the most available and convenient means at Israel's disposal. This was stated today by Energy Minister Yitzhaq Moda'i at the opening in Beersheba of the annual convention of Israeli Nuclear Associations. Moda'i also revealed that the energy ministry has recently ruled out the possibility of establishing an electric power plant run on peat. Our correspondent Yaron Enosh reports: [Begin recording] [Enosh] According to the energy minister, a nuclear energy power plant could be established in Israel within 5 and 1/2 years. To that effect, the energy minister stated, we need the unambiguous resolutions of the scientific community which would justify the use of atomic energy. Moda'i added that these resolutions are as yet not available. If Israeli scientists do not come up with solutions within 3 years, future power plants will run on other means, such as coal. [Excerpts] [TA041940 Jerusalem Domestic Service in Hebrew 1700 GMT 4 Dec 80]

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BRIEFS

NUCLEAR RESEARCH CENTER--The Syrians have started setting up a center for nuclear research and nuclear energy which will be one of three research centers recently established in the Damascus area. The other two are: the Center for Science and Research studies where they will engage in electronics, industrial management and applied research; the Center for Industrial Research and Development where they will deal with production processes etc. According to the British scientific journal THE NEW SCIENTIST, the Center for Nuclear Research has not yet reached an operational stage. The establishment of the three centers indicates a considerable effort on the part of the Syrian government to adopt western technologies, especially in the nuclear field. [Text] [Tel Aviv MA'ARIV in Hebrew 24 Sep 80 p 1] 9467

CSO: 5100

CAMEROON

BRIEFS

NONPROLIFERATION TREATY--Cameroon attaches great importance to Article VII of the nuclear nonproliferation treaty which states that countries without nuclear forces have the right to create a denuclearized zone, according to a statement by Mr Jacques Booh, Cameroon representative to the nonproliferation treaty conference meeting in Geneva. Mr Booh, nevertheless, lamented over the fact that the South African government could acquire nuclear arms with the help of certain industrialized countries which adhere to the treaty and that of Israel which has not signed the treaty. [Text] [Paris AFRIQUE DEFENSE in French Oct 80 p 15] 9128

CSO: 5100

FURTHER DETAILS REVEALED OF SECRET FRANCE-SWEDEN NUCLEAR PACT

Stockholm DAGENS NYHETER in Swedish 18 Nov 80 p 24

[Article by Ingvar Andersson: "Agreement About Nuclear Waste: Cost In The Billions But No Guarantees Yet"]

> [Text] The cost is over 1.1 billion kroner without any guarantees that the improvement of the waste from the nuclear reactors will take place.
>
> Deliveries of almost 7,000 kg of plutonium to Sweden, enough for several smaller atomic bombs.
>
> This is some of the information that can be read in the "great" secret improvement agreement which the Swedish Atomic Resources (SKBF) and the French development company Cogema signed in March of 1978. DN has taken over a part of the agreement.

When the agreement was signed, it was a matter of vital necessity for the Swedish nuclear company. The reactors could not be charged without the agreement; and when the nuclear company argued, through SKBF, in March 1978 that an agreement be signed, it was stated that improvement of the waste from all Swedish reactors be solved during the 1980's.

Now, however, it appears that the agreement provides no guarantees for improvements. Neither the so-called great agreement, which stretches till 1990, nor the "little" agreement, which DN revealed on 24 October, which applies to a smaller quantity of waste from Ringhals 3.

Six Hundred and Twenty Tons

The secret agreement, which DN has now partially taken over, deals with improvement of 620 tons of burnt waste.

In the agreement, the following can be read, among other things: The Swedish nuclear industry will be forced to pay approximately 1.1 billion kroner without guarantees that the French will executie any work at the Swedish nuclear power companies.

Sweden must pay parts of the French development plant. (It has not been built yet).

Even research and development of improvement methods must be partly funded by Sweden.

Sweden can be forced to take back all the waste that is passed to France without it being improved.

Besides, Sweden is obligated to take care of all kinds of waste from the plant. Parts of the plant, liquids that are used during improvement work, instruments and so on, are examples of what we may be forced to receive.

According to the contract, Cogema has the right to begin improvement work before the plant is ready and before equipment and methods can be tested and developed.

If the improvement work comes to pass, it will yield us 6.770 kg of plutonium. That is enough for a great number of smaller atomic bombs.

Breeder Fuel

The Swedish power companies have stated that the plutonium will be sold abroad to be used as fuel in the so-called breeder reactors.

One condition that the new nuclear power station be charged in Sweden is, that the so-called code of conditions be fulfilled.

The code demands, among other things, "a satisfactory improvement agreement" and therefore it is a matter of vital necessity for the power companies to display an agreement.

The code of conditiobs also demands that the waste can be stored securely, which, among other things, has lead to the power companies presenting a plan--KBS 1--to the waste trade. This plan--which is approved by the administration--presupposes that the waste will be poured in glass at Cogema in France.

In this now revealed secret agreement it comes forth that no guarantees exist about the waste being put under glass cover.

9583
CSO: 3100

GOVERNMENT, PEOPLE DEBATE NUCLEAR POWER PLANT OPENING

Zurich DIE WELTWOCHE in German 29 Oct 80 p 19

[Article by Inge Santner: "Struggle and Fuss Over Zwentendorf"]

> [Text] Once they wanted to be a shining example for the entire world and do without nuclear power. But now many have changed their minds.
>
> Today, the Austrians would be glad to have nuclear power. The pioneers of the 1978 popular referendum are embarrassed over their naivete at that time.

Vienna--In Austria it is Zwentendorf time again. "How long do you want to continue to pay for a nuclear power plant that does not deliver any power?" ask large advertisements by the electric power industry in the newspapers. And: "We have a power plant of our own and have to import nuclear power from abroad. Does that make sense?"

Yes, does that make sense? Whoever cannot answer this leading question is called on to sign a so-called "popular request" between 3 and 10 November, which advocates starting up the presently idel Zwentendorf nuclear power plant. Whether he is acting sensibly in doing that, at least, he will have a hard time deciding.

Several times already the Austrians have faced the decision of conscience, whether to say yes or no to nuclear power and in fact acted in good conscience--but unfortunately arrived at totally contrary decisions:

Around 1970 pure atomic euphoria prevailed in Austria. Bruno Kreisky and his countrymen, red as well as black, felt like backbenchers with regard to progress, because in contrast to their neighbors they were not yet able to show any chain reactions. So let's finally have a nuclear power plant, this pride of contemporary technology! In 1972 construction was begun west of Vienna in Zwentendorf on a 770-megawatt reactor, which met all requirements with respect to safety but as a result became extremely expensive as well--it cost an impressive 1.2 billion Swiss francs. A second nuclear power plant was to follow further up on the Danube.

Beginning in 1976 the first doubts showed up as to whether water-rich Austria should really rush into the nuclear age in such an upstart manner. A public information campaign, which allowed the chancellor, who had become equally uncertain,

uncertain, to go ahead, brought decisively more confusion than knowledge. Work on Zwentendorf was slowed a little, and plans for the second reactor were abruptly shelved.

In 1978, when Zwentendorf stood all finished, the Austrians knew expressly what they wanted: no nuclear power plant. Filled with a pioneering spirit for a better future they voted in a popular referendum on 5 November 1978, and a majority of people expressed their opposition to starting operation at Zwentendorf. The sinfully expensive showpiece and the 484 nuclear fuel rods that had been flown in had to be put in mothballs. About 150 highly paid engineers and workers toiled for more than 9 months dismantling the pumps, valves and pipelines, since,--according to technical director Alfred Nentwich--"it is just as difficult to do a good job taking apart a nuclear power plant as it is to do a good job building it." To be sure, the entire procedure again cost millions but filled the Austrians with the deepest satisfaction. They felt they were a shining example to the whole world.

And today? Well, today the Austrians would really be happy if Zwentendorf actually were to deliver the 12 percent of the Austrian demand for power, which was the purpose for which it was built. More precisely, the proud pioneers of 1978 are a little embarrassed over their naivete at that time. How could they even imagine that despite the constantly rising demand for power in the long run they would be able to do without nuclear power? And further: How could Austria, a dwarf in power politics, seriously try to play the role of social reformer? The recent change in thinking comes from the knowledge that renunciation of nuclear power has a high price, that it automatically means loss or at least a reduction of political independence.

Austria is already far more dependent on Eastern European fuel imports than is good for neutrality. No less than 40 percent of the total energy imports comes from communist countries. And the percentage is growing. In 1979 the Alpine republic bought coal, natural gas, crude oil and electric power for 1.7 billion Swiss francs from the East bloc. In 1980 it will shell out nearly 2.7 billion for this type of Eastern imports. This gloomy situation logically gives an impetus to all those who would rather be dependent on their own nuclear power than on Eastern energy dictates. The Zwentendorf fans, originally a scattered bunch from the energy industry plus a few trade union and industrial people, are decisively gaining ground. They rely not merely on a respectable proportion of SPOe [Socialist Party of Austria] members--except for Jusos [Young Socialists] and Greens, of course. A growing number of the supporters of the oppositional OeVP [Austrian People's Party] are joining the nuclear camp. According to the most recent survey, as many as 57 out of 100 Austrians already favor bringing Zwentendorf out of moth balls and beginning operation as quickly as possible, and only 43 percent are against it.

In the Vienna government there has long been consensus regarding the necessity of a nuclear future. The discussions deal only with the most practical ways to proceed, for the matter is as muddled as possible from a legal point of view. This is because in 1978 the large parties simply lost their nerve after the anti-Zwentendorf vote. In order to appear to be good democrats they immediately passed two laborious measures with momentous impact. First, in December 1978 they passed the so-called antinuclear law, which needs a two-thirds majority in order to be revoked. And, second, they eagerly agreed that the Zwentendorf reactor could only be started up after a new popular referendum. Until now they have felt compelled to insist time and again that they would "of course respect the will of the people."

Politicians not from Vienna would probably have capitulated in view of such legislative barricades. But not the Viennese. They are trained to master schizophrenic situations. And so they worked out a complicated but probably practicable way: They found a private citizen named Herbert Schoefnagel, who (with state funds, naturally) will initiate a so-called "popular request" for the purpose of starting up Zwentendorf. This popular request, not to be confused with a popular referendum, is to collect the 200,000 signatures which according to the constitution are needed to bring a legislative proposal into Parliament bypassing the government. If it succeeds, which no one doubts, the parliamentarians will have no choice but to respect the will of the people, discuss the nuclear issue again and in the end even revoke the antinuclear law. Another popular referendum can then be held and result in a yes for Zwentendorf.

If the complicated procedure succeeds, electricity from the Zwentendorf reactor--all's well that ends well--will begin to flow in the fall of 1982 or in the spring of 1983. Provided, of course, that the conscientious Austrians do not undergo another change of mind in the meantime.

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CSO: 5100

FRANCE

BRIEFS

COOPERATION ON NUCLEAR SITES--Strasbourg--On Thursday, 20 November, France was called on the carpet in the European Parliament concerning nuclear powerplant sites on borders. By a large majority, Parliament members approved a resolution -- with UDF [French Democratic Union] and RPR [Rally for the Republic] representatives voting against and French communists abstaining -- requiring the establishment of community safety standards and the participation of border residents in the choice of sites. The Giscardians tried in vain to attenuate the scope of the text. In contrast, the Belgians, Luxembourgers and Germans managed to strengthen the bill introduced by Mrs Von Alemann (Liberal, Federal Republic of Germany). For his part, Oehler (Socialist Party) succeeded in obtaining a vote on an amendment calling on "officials in member nations to give priority to communes and border regions in member nations in consultations concerning proposed sites and if need be, in impact studies and public inquiries concerning these projects." Considering that in Paris, their government does not have the means to impose bilateral consultations worthy of the name, the Belgian and Luxembourg representatives managed to have the Parliament ask the Nine for "the establishment of a community consultation procedure for electric powerplants that might affect the territory of another member state." The French deplored what they consider to be an attempt at denigration. Calvez (UDF) stated that "we cannot institute a community procedure for consultation when the EEC does not yet have a real energy policy." Turcat (RPR) said that with the passage of such resolutions, the Nine would run the risk of checking the implementation of their energy independence program. For Damette (PCF), the motion signifies "the questioning of the authority of member nations and the integration of national energy policies to the benefit of American multinational firms." [Text] [Paris LE MONDE in French 22 Nov 80 p 40] 11,464

REACTORS TO ALGERIA--France will bring Algeria into the group of nuclear nations as it did with the PRC and Iraq. Paris plans to provide two research reactors to the North African nation shortly and to deliver, presumably around 1990, a nuclear power plant. A number of Algerian atomic scientists are already being trained in France. [Text] [Hamburg DER SPIEGEL in German 15 Dec 80 p 17]

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ITALY

CNEN CHAIRMAN DEFENDS ROLE OF NUCLEAR ENERGY

Naples IL MATTINO in Italian 1 Nov 80 p 4

[Article by Federico Tortorelli: "Nuclear Energy: An Option Which Is Still Causing Divisiveness"]

[Text] Naples--"The nuclear option is still a compelling choice for a country which would like to maintain its present level of well-being and not only resolve the problem of employment and the south but not worsen the problems of industry with difficulties in meeting the demand for electrical power." This is how Prof Umberto Colombo, chairman of the CNEN [National Nuclear Energy Commission] closed his report on "The Role of Nuclear Energy in the Country's Energy Prospects" at the ISVEIMER [Institute for the Economic Development of Southern Italy] before a scant audience made up mostly of experts.

Outside a few youths belonging to GRE (Groups for Ecological Research] were brandishing streamers and placards contesting the "nuclear option."

The Colombo report and the handbills distributed by GRE youths are a true expression of the status of the debate on the energy policy: On the one hand, government technicians and experts convinced that there is no realistic alternative to "nuclear power" and, on the other, the alternative groups who maintain that "the nuclear option is in keeping with the logic of Yalta in that it will reduce Italy to the status of a 'colony,' making itself definitely dependent on producers of uranium (the Soviet Union) and on those who possess advanced technologies (the United States)."

This is a ritual which has been repeating itself for years with no tangible result unless it be that of giving rise to a dialog among the deaf. Polemics between the nuclear and antinuclear factions have boiled down to two irreconcilable leanings; and, therefore, the unsuccessful discussion with the public (after the "provocations" of CNR [National Research Council] Chairman Quagliariello and Professors Amatucci and Antinolfi) has not been a great loss in that it would have been difficult for that discussion to add anything new.

But let us examine in detail what the national energy plan is proposing and what prospects the state has for various energy sources (from conventional types to alternatives, including nuclear energy).

An examination of the statistics (in the first 8 months of 1980 the trade deficit came to 11.182 trillion lire, about 10 times that of the 1.150 trillion lire chalked up during the same period of 1979) reveals a gradual deterioration of the situation which, "from an almost total standoff in 1978, when industry's assets cancelled the energy and food liabilities, brings us in 1980 to an indebtedness which is almost the equivalent of the entire energy balance."

"Therefore, the energy loss," Colombo, who was introduced by ISVEIMER Chairman Ventriglia, asserted, "must be compensated by noncommercial items from the balance of payments, and this is a precarious situation which can only get worse. Under these conditions, the energy program is becoming all the more urgent.

The energy bill which the Ministry of Industry has been proposing within the last few months stems pricisely from the conviction that by 1990 we must confine our energy consumption to not more than 200 million tep and assign oil the role of "residual" source.

After a detailed analysis of investments for alternative sources (gas, coal, nuclear, renewable), Colombo dwelt a while on the role of nuclear energy and stressed in precise opposition ot the antinuclear groups that "it is now widely known that the energy situation requires constant and decisive interventions and that it is not a short-term problem nor a problem to be confronted through a search for original solutions outside a general strategy shared with the other major countries of the West."

The nuclear proponents have therefore chalked up a point in their favor. Let us await the reply from the opposing groups.

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ENERGY COUNCIL WANTS DISCUSSION ON NUCLEAR ENERGY REVISED

Failure of Debate Predicted

Amsterdam ELSEVIERS MAGAZINE in Dutch 8 Nov 80 pp 162-165

[Article by Frank Lafort: "The Failure of a Discussion Not Yet Held: Energy Council Wants New Format for the 'Big Talk Event'"]

> [Text] The large-scale discussion event on (nuclear) energy, the Broad Popular Discussion [BMD], in its current format, is doomed to failure, say the CDA [Christian Democratic Appeal] and the D'66 [Democrats of 1966]. The parliamentarians are supported in this position by the General Energy Council, which proposed to the minister of economic affairs that the big talk event be organized on different lines entirely.

The Ministry of Economic Affairs says the 30 billion guilders are the stakes in the "hidden debate": the Broad Popular Discussion (BMD). That is, our country will have to count out this formidable sum of money above current payments for the import of scarce oil, gas and coal in 1990. Without radical measures in the near future, according to the department, a serious disturbance threatens our already wobbly energy balance, which in the year 1980 only remains in equilibrium due to our enormous natural gas exports, a source of welfare and prosperity which is, however, slowly drying up. A few more facts: from various studies carried out independently of one another, it has become clear that the Western World--and therefore the Netherlands as well--will be confronted by an annually increasing shortage of petroleum by the end of the 1980's. In a study by the Workshop on Alternative Energy Strategies (WAES), the oil shortage around the year 2000 has been estimated at nearly 1 billion tons. New figures from the International Energy Agency illustrate unmercifully that this course of events in the coming decades will mark the developing countries as the big losers. Ever higher oil prices, even if they are not further elevated by regional wars, and a steadily growing demand for the black gold from the industrialized world, further aggravate the North-South confrontation. No wonder that various prominent institutions, including the American Rockefeller Foundation and the Club of Rome suggest that because of a possible oil shortage a new world war cannot be excluded. The Rockefeller Foundation says "the battle" for the scarce oil is primarily a danger to the economic and monetary system.

It is in part against the background of this global problem that the Broad Popular Discussion will be begun early next year in the Netherlands. The apparent focal point of this "popular consultation" is the question: atomic energy or not? The actual issue, however, is the fundamental discussion of the purposes of science and technology, the results of the economy of growth, and the role of the citizens in decisions about important technological developments, elements which are jammed together in the position for or against electricity from the atom. The impetus for the repeatedly postponed big talk event, as the government has proposed it, is particularly slight. Thus the guiding body which is to organize and accompany the BMD has not yet even been formed. Prominant Netherlanders like Biesheuvel, the former prime minister, Kloos, the former chairman of VARA, Donner, the former attorney general, and Samkalden, the former mayor, have refused categorically to take seats on that guiding body. This reaction of refusal was predictable, according to officials from the Ministry of Economic Affairs, because a large majority will remain dissatisfied with the results of the (nuclear) energy discussion in its present format. As the "long march" to Doodewaard has emphasized once again, a consensus in this emotional and controversial question is demonstrably impossible.

Minister Van Aardenne (Economic Affairs) has written the Standing Chamber Commission on Nuclear Energy another letter, dated 7 October:

"The question of the staffing of the guiding body, which, in accordance with the wishes of the Chamber is to be expanded by 5 or possibly 7 people, is a problem which gives me difficulty." Feelings of discomfort which are also very much present with the General Energy Council (AER), an independent, unofficial advisory college. The chairman of the AER, Dr A.P. Oele, the minister writes to the Chamber members, "has promised me that he will communicate with me in more detail in a short time." A remarkable message, because the AER itself had cooked up the rules for the discussion festivities. Three goals were to form the basis for the BDM. In the first phase, the information already available on (nuclear) energy and component areas is to be "objectivized" and rounded out. In the second phase, an active participation by the populace in the process of opinion formation is to be brought about, and in the third phase the opinions are to be "registered."

Economic Affairs promised to make contact with the Standing Chamber Commission as soon as possible after the receipt of the AER letter. The minister had the AER letter, dated 10 October, on his desk 3 days after this ministerial communication. The content of this writing, which has not yet reached the Second Chamber, speaks volumes: "Avoiding further delays (in the BMD, ed.) is of increasing importance. There is concern in the Council [AER] about the delay and there are fears of an impasse. The Council is prepared upon your request to provide you with advice as to an altered format for the first phase, by which the effectiveness of the BMD can be served."

The AER thus makes it clear that it is not willing to give advice as to a different format for the BMD "on its own initiative," because in the meantime "expectations have been aroused" about the coming 2-years-long discussion event. The discomfort voiced by the BDM's spiritual father, the AER, must, high officials in the Ministry of Economic Affairs say, be a signal to the minister. That is, a political decision is necessary--and the responsibility rests with Van Aardenne--to make changes in the present format of the BDM. In other words, the AER letter of 10 October is an "open invitation" to the minister to make adjustments in the BDM rules. Indeed, Van Aardenne is assured of the cooperation of the AER in advance.

The diplomatically couched AER suggestions mean that Van Aardenne really must go back to parliament to get the green light for a different format for the BDM. And the way the cards are now, Economic Affairs can count on a broad majority in that case. D'66 [Democrats of 1966] Chamber member Mrs J.J. Lambers-Hacquebard already calls the BDM "sickly" and "heavily burdened." According to Mrs Lambers, "it must give everyone pause that during the so-called Lockheed affair, the Donner commission did function, while we are not even in a position to form a guiding body for the BMD." The D'66 Chamber member would most like to see a special Chamber commission, providing it be well-equipped, take over the job of the guiding body: "The parliament is a reflection of the pluriform composition of the Dutch people, while that organ is also democratically chosen."

There is also concern within the current governing coalition about the impasse into which the BMD preparations have blundered. CDA Chamber member Dr H. Eversdijk: "Quite a few uncertainties as to the start and content of this discussion have come about which cause the BMD to be a flop. That must be avoided. The development of (atomic) energy is too important for that, the more so because it greatly engages the emotions." This week the Christian Democrat is certainly asking the minister of economic affairs questions about the AER letter.

The growing skepticism within parliament and the AER about the success of the BMD may be attributed, according to experts, to several events which have shaken the confidence in the procedures established. To begin with, the Ministry of Economic Affairs has clearly taken sides in the discussion. In the third part of the report, "Energy Policy," the department has decided in favor of the three atomic power plants planned in 1974 by the Den Uyl cabinet. Besides that, the political parties have already tied themselves to one position on nuclear power, without waiting for the results of the BMD they talk so much about. The third obstacle is the Chamber's decision to halt the test drilling for the burying of radioactive wastes for the duration of the BMD. And last but not least, the difficulties surrounding the formation of a guiding body composed of wise men. This problem, however, can be solved quickly if the AER's "new recommendations" are followed. Within Economic Affairs' advisory framework there is a growing consensus for bringing about a "slimmed down" BMD, which fits into current practice. Because of the absence of a guiding body, Minister Van Aardenne has called in the help of the AER to carry out certain study missions.

For its part, the AER in turn has delegated certain subsidiary studies to several research institutes. In this way, on the recommendation of the AER, Engr Potma recently received a contract worth 1.5 million guilders from the Ministry of Economic Affairs to work out his "forget (energy) scenario," focused upon limited economic growth and the environment.

Seen against this background, the thought with which the AER is playing is certainly not revolutionary, but it is efficient because of its simplicity. For a "slimmed down" BDM, according to the AER, a guiding body must be formed from "independent experts," who take inventory of what component studies (safety, security, storage of radioactive wastes, danger of proliferation, etc.) are necessary to fill in the lacunae in the available information, component studies which would not then be carried out by the guiding body but which would be delegated to institutes which would have to present conflicting views clearly. Nearly 14 million guilders are available for this operation, so there is no lack of money.

The reports from the institutes which inventory the various opinions will have to be presented to the public within 1 or 2 years. In this new format, it will not be difficult to find a guiding body of "wise men." In contrast with the present format, they need not evaluate the information which has grubbed up themselves, and thus in the "new style" BMD they avoid ruffling the feelings of that part of the Dutch people who will be dissatisfied with the results whatever they may be. The job of the wise men or experts in the new format is limited to simply delegating the working papers to be presented to the public and the parliament, and ensuring their "scientific" level. The new AER idea closely resembles the limited science court. This idea, developed by the American pundit A. Kantrowitz, is precisely intended "to distinguish value judgments with respect to scientific technical problems from one another."

If the new BMD structure, as proposed by the AER, is realized, the many back room meetings planned can be avoided, in which established (insider) groups go beyond themselves in go-no go decisions. At the same time, it will prevent technical differences of opinion from being fought out in large-scale confusion over the heads of the laymen. However, now the minister of economic affairs has the floor.

Energy Problem After 'Dodewaard'

Amsterdam ELSEVIERS MAGAZINE in Dutch 8 Nov 80 pp 165-167

[Article by Pierre Huyslens: "Energy After 'Dodewaard': A Question of Authorized Decision"]

[Text] "Dodewaard" had practically no significance in the framework of the discussion of atomic energy. "Dodewaard" even had a reverse effect, because as a means it attracted more attention than the ill on account of which it supposedly was perpetrated. The means was lacking in that democratic genius by which extraparliamentary actions, too, stand or fall, and for that reason it overshot its mark. The primary lesson from "Dodewaard" is that bad weather is the worst imaginable climate for demonstrations and for that reason everything went off without a murmur: "officers" and demonstrators offered one another flowery compliments and the demonstration leaders were congratulated on the peaceful course of events, as though they had tendered proof that from now on all demonstrations against nuclear energy would be carried out in the same peace-loving manner. "Dodewaard" can go down in the annals as a precious incident, primarily because of the publicity it stirred up. Which annals? Not those of demonstration events in the Netherlands, the incident did not have enough "pith" for that. But not for those of the discussion about atomic energy, either, for "Dodewaard" did not contribute to that. It did not stir Minister Van Aardenne to speed up at all his search for the millipede of undisputed nuclear behavior and authoritative format which is going to have to lead the Broad Popular Discussion. Former VARA [Workers' Amateur Radio Association, the Labor Party broadcast organ] chairman Andre Kloos is said to have declined that honor, and socialist politician Dr A.P. Oele, Engr, chairman of the Rijnmond and of the General Energy Council, is said to have his doubts, on closer inspection, of the usefulness of this discussion stimulated in part by him. Why then should Minister Van Aardenne hasten, when he knows how expressly the political parties have negated the discussion--as far out of order as they are themselves on the question of atomic energy? Finally, Van Aardenne is faced with the absolutely concrete cabinet position: the construction of three more atomic powerplants. Which is in contrast with the prime minister's statement during the General Observations that they will not be built, and even that the existing ones will be shut down, if it should prove in democratic discussion that the Netherlands is not served, but in fact harmed, by atomic power. This shading of the position that three more atomic power plants should be built was obviously intended to pour oil on the waves that the demonstration at Dodewaard was intended to stir up.

Now that the political discussion has restricted itself to atomic armament and not to peaceful atomic energy, and now that it is clear that those calling for action have not gained access to the philosophers' stone in their demonstrations, where can it then be found? No reasonable man still believes that it could be the residue of the Broad Public Discussion. That discussion has been annexed to much too great an extent by the opponents of atomic power for that to happen: after all, they do now want to talk any more, they know for certain that atomic power means the end of the world (as evidenced by the protest songs and a multiplicity of aggressive writings). And they know for certain that "Harrisburg" has proven why atomic power cannot be and therefore must not be permitted. So the Swedes are crazy to have voted for atomic energy, "for the referendum was manipulated"; half of the Austrians are not right in the head, because in a popular consultation there, too, 50 percent, or barely not a sufficient "majority," did want atomic energy; the Belgians and the French share in the guilt for "genocide," if they do not immediately take arms against the atomic power plants being built, and the Germans, who have decided clearly and fixedly in favor of diversifying their energy sources with atomic energy and fast breeder reactors, naturally never were worth anything anyway. One hears less about the Russians, even though they are building atomic power plants at a great rate, but they are presumable excused because they have the room for it. In the meantime it appears that the experts have retreated and no longer find it "opportune" to continue to advocate what they presented to mankind with so much show of scientific power a few years ago. At any rate they have not testified with emphasis that after "Harrisburg" atomic energy is still always safe--but can be made safer--the theme of the conference of the International Atomic Energy Agency 2 weeks ago in Stockholm. The servants of atomic power have permitted atomic energy over the past 5 years to receive its most prominent image from the atomic bomb that was dropped on Hiroshima, and that is not the correct image. There has also been remarkably little opposition from the scientific side to the political decision in the Netherlands not to permit test bores into the salt domes which possibly are suitable for the storage of radioactive waste, just as Prof Mosterd gained little support for his position (and persuasion) that radioactive waste ought not to be stored away forever, but in such a way as to be used once again when the time comes.

The agitators against atomic energy, for that matter, themselves provide the proof that of all the arguments that have been employed against atomic energy in the past few years, radioactive waste has remained the most important bone of contention.

Safety and waste: Both problems are soluble. You do not hear much about that. This has given the opponents of atomic power all the more opportunity to bring home to the people not only the "lethalness" of atomic energy production, but also the horrible extent it will have reached by the year 2000. They give the impression that a sinister clan of scientific atomic fanatics allied with the multinations is active in preparing the destruction of future generations with atomic energy. In a European survey last year, Shell once again took inventory of the public's expectations in England, France, the Federal Republic of Germany, Denmark, the Netherlands and Switzerland, with respect to the energy supply in the year 2000. As far as atomic energy is concerned, that expectation is totally excessive: "they" expect that in

2000, more than half of the energy requirement will be covered by atomic energy. And that is certainly not the case. There is also an excessive expectation of solar energy, and a belief that we can see the bottom of the oil supply. "They" prove to have no idea of the run-up time of a coal mine (10 years) or of the time required to build an atomic power plant and put it into operation (more than 10 years). No less than 72 percent of the public in the countries mentioned believe that more than half of the energy requirement will be covered by atomic energy in 20 years. That is nonsense. It would mean the construction of 500 atomic power plants in Europe and the Western World, for a sum of $600 billion! Political parties and the government in the Netherlands (where the excessive expectations are rather high and the "actions" are frequent) have done little to provide any equilibrium in the rash and unscientific flood of "information" about energy in general and atomic energy in particular. Atomic energy is only one of the anchors which ought to secure the ship of industrialized prosperity, because oil and natural gas are not reliable enough to keep the pot boiling. In the lack of better knowledge, coal and solar energy are much too idealized, and windmills as energy producers can certainly now be written off as extremely quixotic. The hopes for nuclear fusion are likewise too great, at least if a short-term solution is seen there.

If people want to await a new energy producer, nuclear fusion for example, why they should they give up the hope at the same time that a new Edison will come along to provide the last and sufficient key to the complete control of the nuclear fission process? In other words, if the hopes for nuclear fusion are justified, so are the hopes for the coming maximal control of atomic fission. That hope is even more justifiable.

The gruesome dependence on oil, to which the price of coal, which is currently called a bargain, will also be adjusted (as the price of natural gas already has been adjusted), demands rational thinking about alternatives and diversification. That is something completely different from the rejection of atomic energy under pressure from the action groups, which are not empowered to make such decisions.

As the previous article made clear, the General Energy Council favors the delegation of the entire matter, divided into important components, to authorized institutes. These duly designated institutes would then report to a guiding body, which would marshall the reports and list the alternatives. The findings of the guiding body would then go to the Chamber, which would reach a decision with a large-scale debate about the future energy supply for the Netherlands.

This is an even better course than that of a parliamentary inquiry, as proposed by the D'66--if only because even the Democrats no longer see any salvation in the Broad Popular Discussion, which has already become impossible.

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BRIEFS

NUCLEAR PLANTS INCREASE SAFETY--The Swedish nuclear power firms of Vattenfall, Sydkraft and Oskarshamnsverket kraftgrupp (OKG) have joined as members in NSAC (Nuclear Safety Analysis Center). This is the joint safety organization of the U.S. nuclear reactor owners. It was created after the accident in the Three-Mile Island reactor to prevent future accidents in nuclear energy through safety studies and recommendations. Now we in Sweden will have access to the entire data system of NSAC for analysis of accidents and near accidents. [Text] [Stockholm DAGENS NYHETER in Swedish 24 Nov 80 p 35]

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